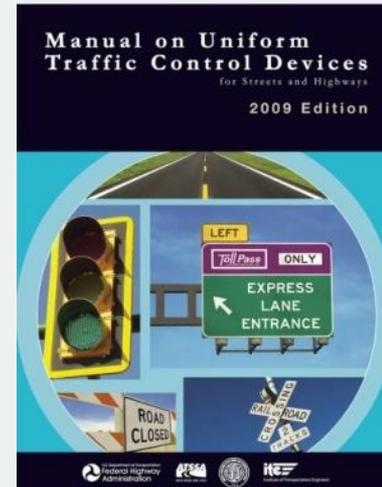


## Part 2 SIGNS TRAINING

February 10, 2011

- Federal MUTCD published in Dec. 2009
- DE MUTCD committee began meeting in Jan. 2010 to establish DE-specific guidance
- DE MUTCD submitted to Delaware Register for public comment in Spring 2011  
[http://regulations.delaware.gov/services/current\\_issue.shtml](http://regulations.delaware.gov/services/current_issue.shtml)
- All presentation materials are DRAFT



- Paragraphs are numbered
- *Guidance is italicized*
- No more metric
- Definitions relocated to Part 1
- **Standards remain bold**
- Options and support remain unformatted
- Delaware Revisions in blue with line in margin and “(DE Revision)” at beginning of paragraph

*Guidance:*

01A (DE Revision) *The Keep Right sign should be installed at median open approach ends where the median width is greater than or equal to 4 feet.*

*Option:*

01B (DE Revision) *The Keep Right sign may be installed at median open approach ends where the median width is greater than or equal to 18 feet.*

*Guidance:*

02 *At locations where it is not readily apparent that traffic is required to pass to the right-hand side of the sign, the sign should be used.*

03 *If used, the Keep Right sign should be installed as close as practical to the center of parkways, islands, and underpass piers. The sign should be mounted on the left-hand side of the sign, or other obstruction separating opposite directions of traffic in the center of the roadway, to pass to the right-hand side of the sign.*

**Standard:**

04 **The Keep Right sign shall not be installed on the right-hand side of the sign. Traffic must pass to the left-hand side of the sign.**

**01 (DE Revision)** When used in this Manual, the text headings of Standard, Guidance, Option, and Support shall be defined as follows:

- A. **Standard**—a statement of required, mandatory, or specifically prohibitive practice regarding a traffic control device. All Standard statements are labeled, and the text appears in bold type. The verb “shall” is typically used. The verbs “should” and “may” are not used in Standard statements. Standard statements are sometimes modified by Options.
- B. **Guidance**—a statement of recommended, but not mandatory, practice in typical situations, with deviations allowed if engineering judgment or engineering study indicates the deviation to be appropriate. All Guidance statements are labeled, and the text appears in unbold type. The verb “should” is typically used. The verbs “shall” and “may” are not used in Guidance statements. Guidance statements are sometimes modified by Options.
- C. **Option**—a statement of practice that is a permissive condition and carries no requirement or recommendation. Option statements sometime contain allowable modifications to a Standard or Guidance statement. All Option statements are labeled, and the text appears in unbold type. The verb “may” is typically used. The verbs “shall” and “should” are not used in Option statements.
- D. **Support**—an informational statement that does not convey any degree of mandate, recommendation, authorization, prohibition, or enforceable condition. Support statements are labeled, and the text appears in unbold type. The verbs “shall,” “should,” and “may” are not used in Support statements.

- **Standards are requirements that SHALL be followed unless there is an Option**
- DE Standard: **Reverted to 2003 MUTCD language allowing engineering judgment**
- *Guidance is recommended and SHOULD be followed*
- Options MAY be followed and are sometimes modifications to Standards and Guidance

Section 2A.01 – Signing for all types of highways  
and private roads open to public travel

- **2A: General**
- **2B: Regulatory Signs, Barricades, and Gates**
- **2C: Warning Signs and Object Markers**
- **2D: Guide Signs – Conventional Roads**
- 2E: Guide Signs – Freeways and Expressways
- 2F: Toll Road Signs
- 2G: Preferential and Managed Lane Signs
- 2H: General Information Signs
- 2I: General Service Signs
- 2J: Specific Service Signs
- 2K: Tourist-Oriented Directional Signs
- 2L: Changeable Message Signs
- 2M: Recreational and Cultural Interest Area Signs
- 2N: Emergency Management Signing

12 In situations where word messages are required other than those provided in this Manual, the signs shall be of the same shape and color as standard signs of the same functional type.

Option:

13 (DE Revision) DelDOT and local highway agencies may develop special word message signs in situations where roadway conditions make it necessary to provide road users with additional regulatory, warning, or guidance information, such as when road users need to be notified of special regulations or warned about a situation that might not be readily apparent. Unlike colors that have not been assigned or symbols that have not been approved for signs, new word message signs may be used without the need for experimentation.

Standard:

13A (DE Revision) Special word message signs installed on state-maintained roadways shall be approved by DelDOT Traffic.

- Custom word messages used for special situations that are not readily apparent to motorists
- **Non-standard word messages shall match standard shape and color**



**James St bridge, Newport**  
Emergency one-lane bridge conversion

Custom regulatory plaque to reinforce alternating right-of-way at one-lane bridge

Option:

06 The approved fluorescent version of the standard red, yellow, green, or orange color may be used as an alternative to the corresponding standard color.

Guidance:

06A (DE Revision) A fluorescent yellow background should be used for overhead warning signs.

- DE Guidance: *Fluorescent yellow (FY) sheeting should be used for overhead warning signs*
- **Fluorescent yellow-green (FYG) background for all school signs**



**NCC Industrial Track Greenway,  
Boulden Blvd crossing**

*FY sheeting used on  
overhead Pedestrian  
warning sign*



**Plaque shall be FYG**

*Guidance:*

- 02 *Word messages should be as brief as possible and the lettering should be large enough to provide the necessary legibility distance. A minimum specific ratio of 1 inch of letter height per 30 feet of legibility distance should be used.*
- 03 *Abbreviations (see Section 1A.15) should be kept to a minimum.*
- 04 *Word messages should not contain periods, apostrophes, question marks, ampersands, or other punctuation or characters that are not letters, numerals, or hyphens unless necessary to avoid confusion.*
- 05 *The solidus (slanted line or forward slash) is intended to be used for fractions only and should not be used to separate words on the same line of legend. Instead, a hyphen should be used for this purpose, such as "TRUCKS - BUSES."*

**Standard:**

- 10 **(DE Revision)** All sign lettering shall be in upper-case letters as provided in the "Standard Highway Signs and Markings" book (see Section 1A.11) and the Delaware Standard Signs book, unless otherwise provided in this Manual for a particular sign or type of message.
- 11 The sign lettering for names of places, streets, and highways shall be composed of a combination of lower-case letters with initial upper-case letters.

- *Abbreviations should be minimized*
- *Punctuation should not be used*
- **Lettering shall be upper-case except for names of places, streets, and highways (combination upper-case and lower-case)**



**Regulatory signs shall be black-on-white**

**OLD**



Upper-case / lower-case  
legend now required

**NEW**



### Option:

01 Based upon engineering judgment, where the improvement of the conspicuity of a standard regulatory, warning, or guide sign is desired, any of the following methods may be used, as appropriate, to enhance the sign's conspicuity (see Figure 2A-1):

- A. Increasing the size of a standard regulatory, warning, or guide sign.
- B. Doubling-up of a standard regulatory, warning, or guide sign by adding a second identical sign on the left-hand side of the roadway.
- C. Adding a solid yellow or fluorescent yellow rectangular "header panel" above a standard regulatory sign, with the width of the panel corresponding to the width of the standard regulatory sign. A legend of "NOTICE," "STATE LAW," or other appropriate text may be added in black letters within the header panel for a period of time determined by engineering judgment.
- D. Adding a NEW plaque (see Section 2C.62) above a new standard regulatory or warning sign, for a period of time determined by engineering judgment, to call attention to the new sign.
- E. Adding one or more red or orange flags (cloth or retroreflective sheeting) above a standard regulatory or warning sign, with the flags oriented so as to be at 45 degrees to the vertical.
- F. Adding a solid yellow, a solid fluorescent yellow, or a diagonally striped black and yellow (or black and fluorescent yellow) strip of retroreflective sheeting at least 3 inches wide around the perimeter of a standard warning sign. This may be accomplished by affixing the standard warning sign on a background that is 6 inches larger than the size of the standard warning sign.
- G. Adding a warning beacon (see Section 4L.03) to a standard regulatory (other than a STOP or a Speed Limit sign), warning, or guide sign.
- H. Adding a speed limit sign beacon (see Section 4L.04) to a standard Speed Limit sign.
- I. Adding a stop beacon (see Section 4L.05) to a STOP sign.
- J. Adding light emitting diode (LED) units within the symbol or legend of a sign or border of a standard regulatory, warning, or guide sign, as provided in Section 2A.07.
- K. Adding a strip of retroreflective material to the sign support in compliance with the provisions of Section 2A.21.
- L. Using other methods that are specifically allowed for certain signs as described elsewhere in this Manual.

- New section; some Options currently in use in DE

- |                  |                |                  |
|------------------|----------------|------------------|
| – Increased size | – NEW plaque   | – Warning beacon |
| – Double posting | – Header panel | – Stop beacon    |

Header panel above  
regulatory sign



**SR 1 north of Dartmouth Dr**

*Guidance:*

03 *(DE Revision) For post-mounted signs, the lateral offset should be 6 feet to 12 feet from the edge of the traveled way. If a shoulder wider than 6 feet exists, the minimum lateral offset for post-mounted signs should be 6 feet from the edge of the shoulder.*

*Option:*

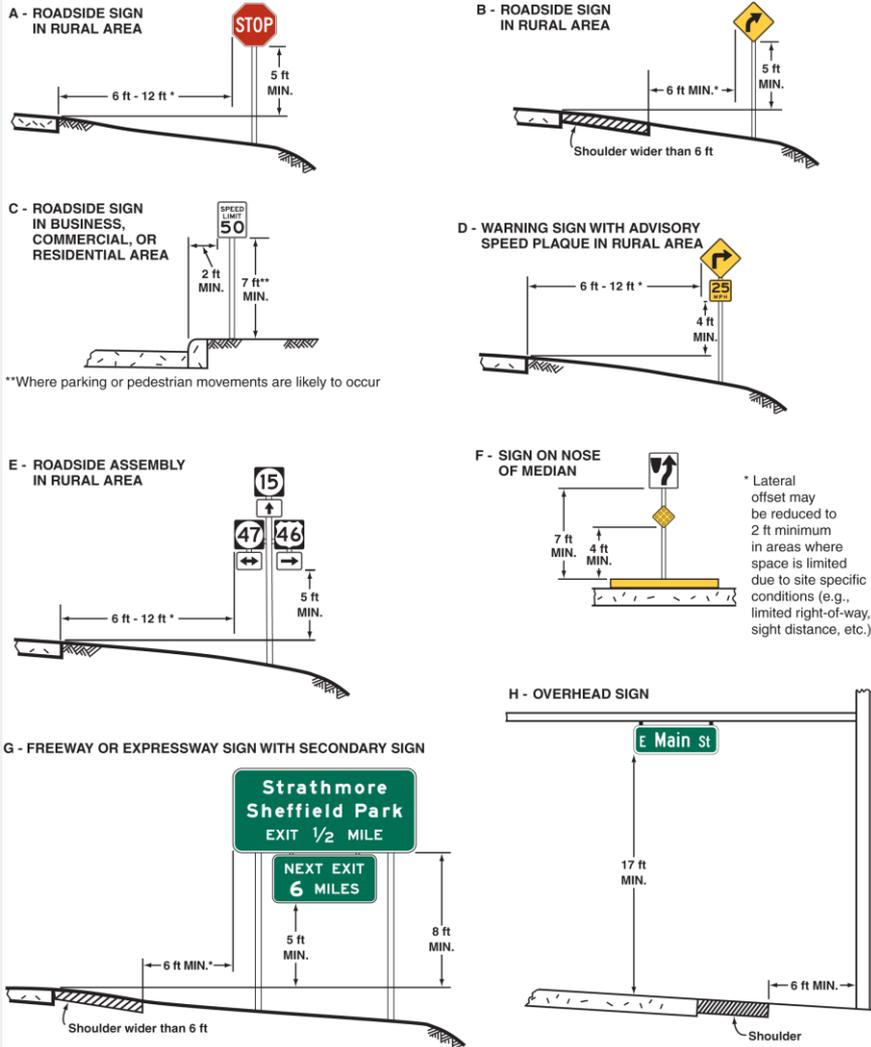
09 Lesser lateral offsets may be used on connecting roadways or ramps at interchanges, but not less than 6 feet from the edge of the traveled way.

10 On conventional roads in areas where it is impractical to locate a sign with the lateral offset prescribed by this Section, a lateral offset of at least 2 feet may be used.

11 A lateral offset of at least 1 foot from the face of the curb may be used in business, commercial or residential areas where sidewalk width is limited or where existing poles are close to the curb.

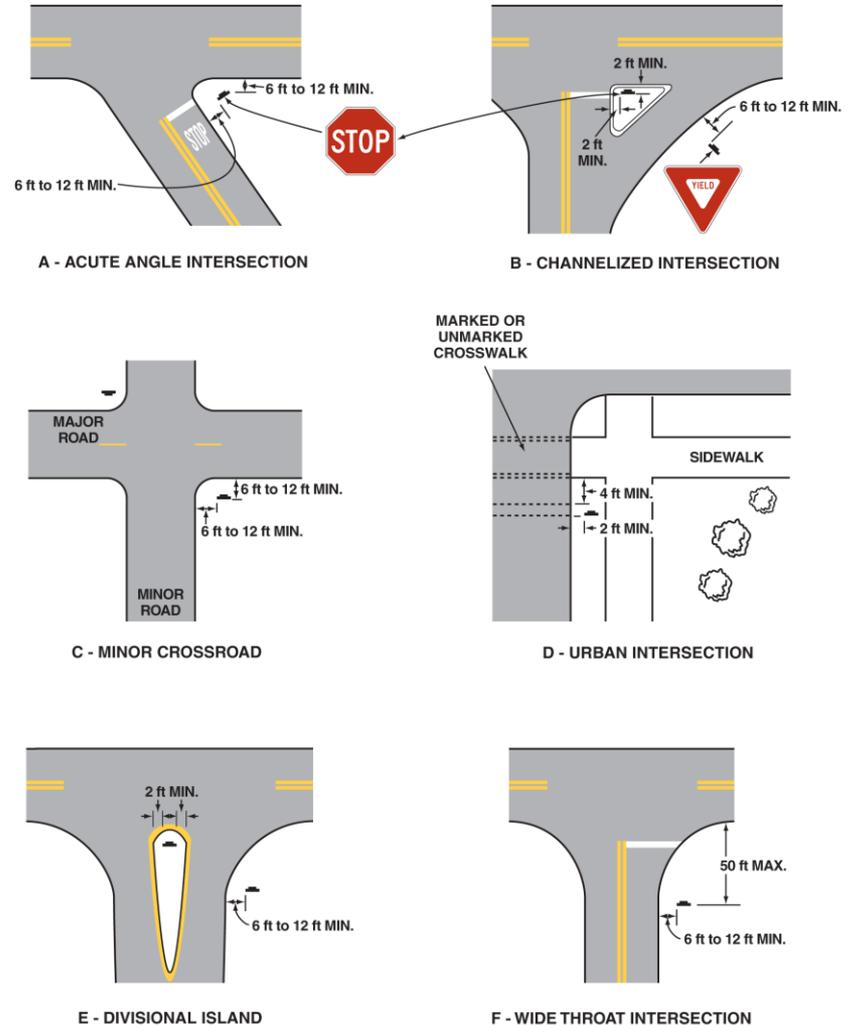
- DE Guidance: *6-ft to 12-ft lateral offset from pavement edge regardless of shoulder width*
  - May be reduced to 2 ft if constrained (e.g., right-of-way, utilities, sight distance)

**Figure 2A-2. Examples of Heights and Lateral Locations of Sign Installations (Delaware Revision)**



Note:  
See Section 2A.19 for reduced lateral offset distances that may be used in areas where lateral offsets are limited, and in business, commercial, or residential areas where sidewalk width is limited or where existing poles are close to the curb.

**Figure 2A-3. Examples of Locations for Some Typical Signs at Intersections**



Note: Lateral offset is a minimum of 6 feet measured from the edge of the shoulder, or 12 feet measured from the edge of the traveled way. See Section 2A.19 for lower minimums that may be used in urban areas, or where lateral offset space is limited.

**Guidance:**  
01A (DE Revision) *At intersections of multi-lane roads with single lane roads, the regulatory sign sizes on all approaches to the intersection should be as required for multi-lane roads.*

**Standard:**  
03 Except as provided in Paragraphs 4 and 5, the minimum sizes for regulatory signs facing traffic on multi-lane conventional roads shall be as shown in the Multi-lane column of Table 2B-1.

**Option:**  
04 Where the posted speed limit is 35 mph or less on a multi-lane highway or street, other than for a STOP sign, the minimum size shown in the Single Lane column in Table 2B-1 may be used.  
05 Where a regulatory sign, other than a STOP sign, is placed on the left-hand side of a multi-lane roadway in addition to the installation of the same regulatory sign on the right-hand side or the roadway, the size shown in the Single Lane column in Table 2B-1 may be used for both the sign on the right-hand side and the sign on the left-hand side of the roadway.

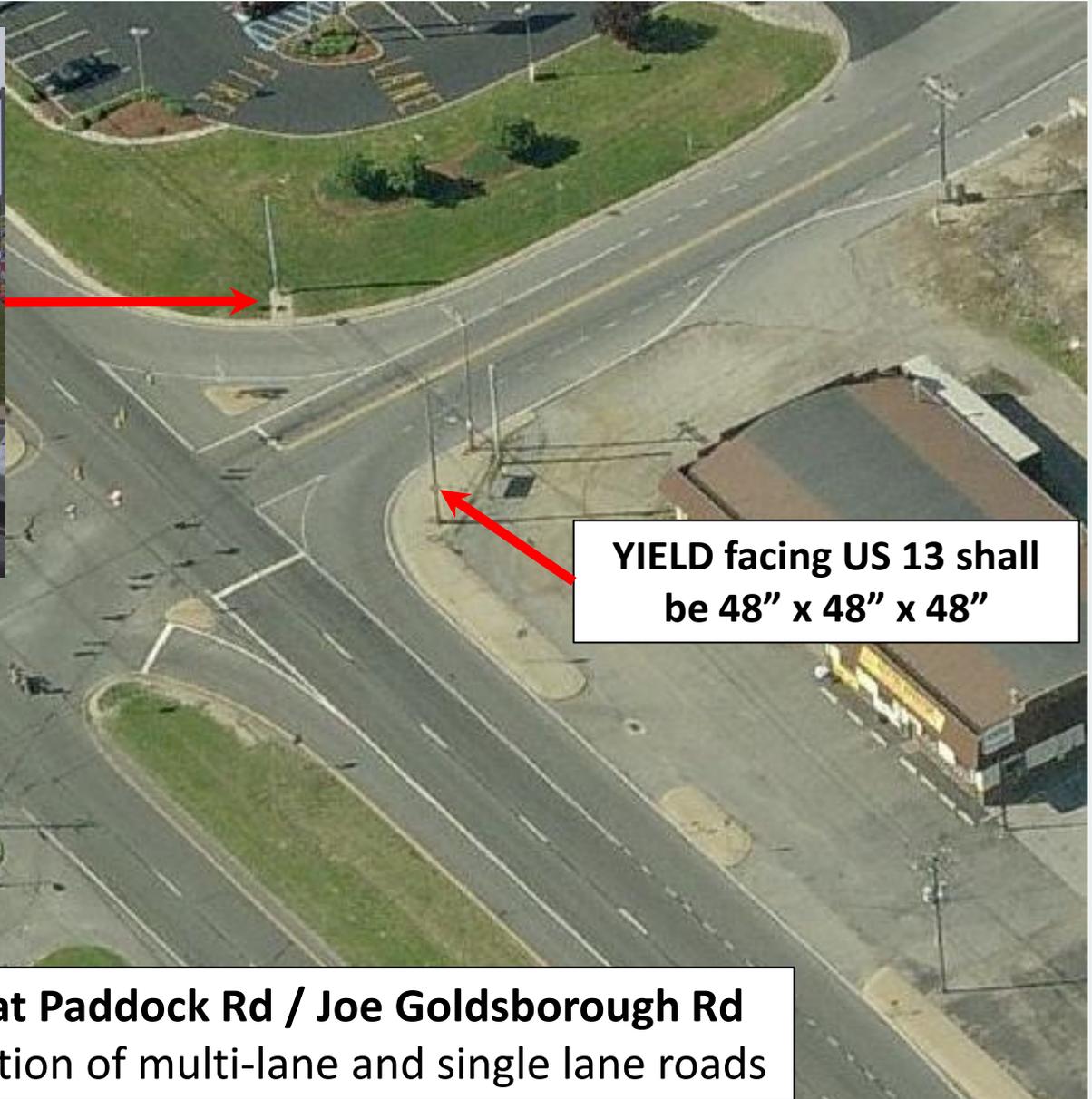
**Table 2B-1. Regulatory Sign and Plaque Sizes (Sheet 1 of 5)**  
**(DE Revision)**

Sign or Plaque	Sign Designation	Section	Conventional Road		Expressway	Freeway	Minimum	Oversized
			Single Lane	Multi-Lane				
Stop	R1-1	2B.05	36 x 36**	36 x 36	36 x 36	—	30 x 30*	48 x 48
Yield	R1-2	2B.08	36 x 36 x 36*	48 x 48 x 48	48 x 48 x 48	60 x 60 x 60	30 x 30 x 30*	—
To Oncoming Traffic (plaque)	R1-2aP	2B.10	24 x 18	24 x 18	36 x 30	48 x 36	24 x 18	—
To U-Turning Traffic (plaque)	R1-2aP-DE	2B.10	24 x 18	24 x 18	36 x 30	—	—	—

- **Sizes shall follow Table 2B-1**
- **Larger sizes for multi-lane roads with a posted speed limit ≥ 40 MPH**
- Single Lane size can be used on multi-lane road if same sign is posted on left-hand and right-hand side
- DE Guidance: *At intersections of multi-lane and single lane roads, larger sizes should be used on all approaches (e.g., YIELD signs)*



*YIELD facing Paddock Rd  
should be 48" x 48" x 48"*



**YIELD facing US 13 shall  
be 48" x 48" x 48"**

**US 13 at Paddock Rd / Joe Goldsborough Rd**  
Intersection of multi-lane and single lane roads

### Standard:

06 A minimum size of 36 x 36 inches shall be used for STOP signs that face **multi-lane approaches**.

07 Where side roads intersect a multi-lane street or highway that has a speed limit of 45 mph or higher, the minimum size of the STOP signs facing the side road approaches, even if the side road only has one approach lane, shall be 36 x 36 inches.

08 Where side roads intersect a multi-lane street or highway that has a speed limit of 40 MPH or lower, the minimum size of the STOP signs facing the side road approaches shall be as shown in the Single Lane or Multi-lane columns of Table 2B-1 based on the number of approach lanes on the side street approach.

### Guidance:

08A (DE Revision) Except as provided in Paragraph 8B, a minimum size of 36 x 36 inches should be used for STOP signs at intersections that include one or more state-maintained roadway(s).

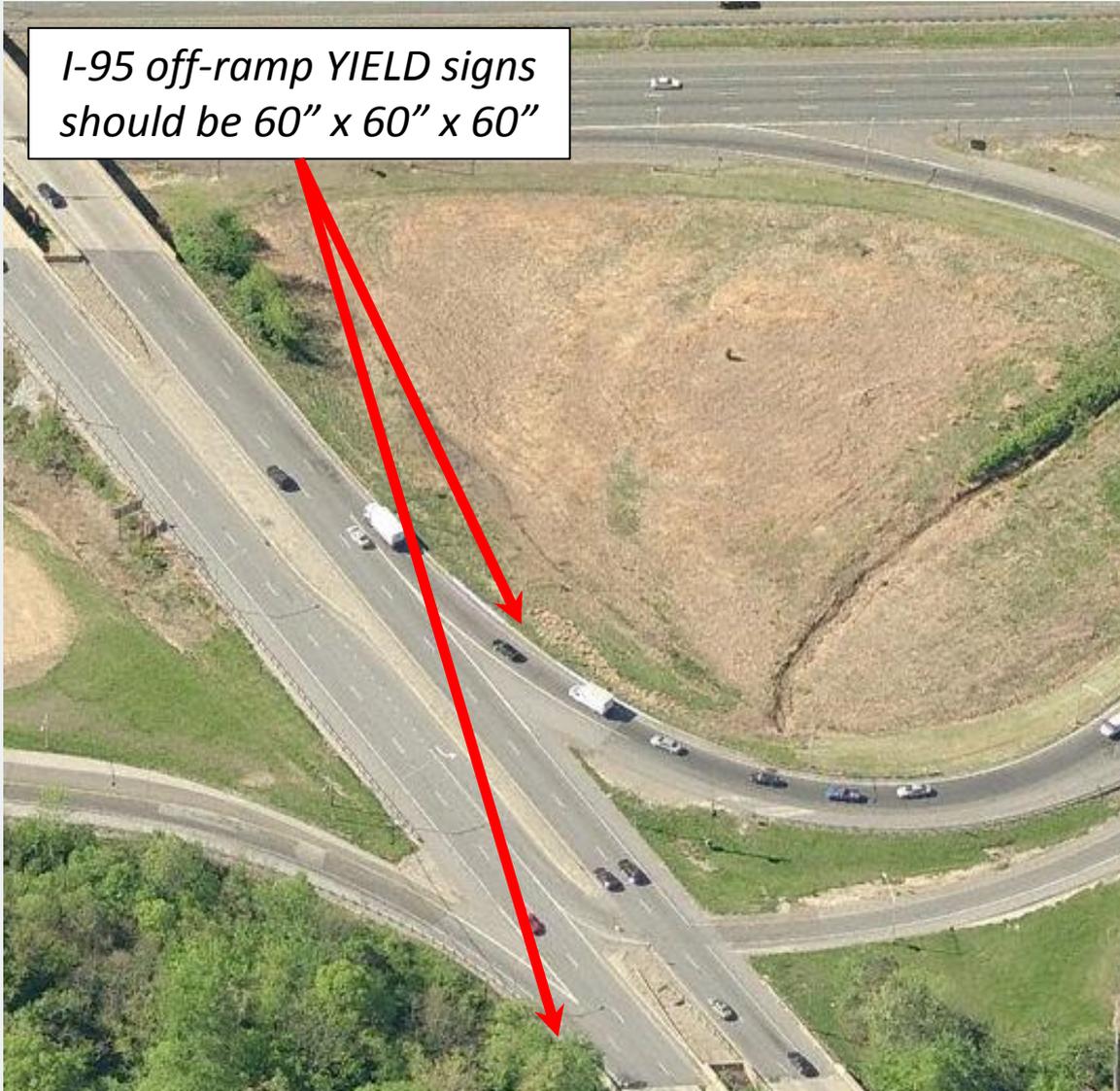
08B (DE Revision) A minimum size of 30 x 30 inches should be used for STOP signs at the intersection of two subdivision streets.

- DE Guidance: 36" x 36" (min.) STOP signs at intersections with one or more state-maintained roadway(s)
- DE Guidance: 30" x 30" STOP signs at intersection of two subdivision streets

09 The minimum sizes for regulatory signs facing traffic on exit and entrance ramps should be as shown in the column of Table 2B-1 that corresponds to the mainline roadway classification (Expressway or Freeway). If a minimum size is not provided in the Freeway column, the minimum size in the Expressway column should be used. If a minimum size is not provided in the Freeway or Expressway Column, the size in the Oversized column should be used.

- On-ramp and off-ramp sign sizes should correspond to mainline roadway classification

*I-95 off-ramp YIELD signs should be 60" x 60" x 60"*



**OLD**



**NEW**



**I-95 southbound off-ramps to SR 896**



- Standard:**
- 01 When it is determined that a full stop is always required on an approach to an intersection, a STOP (R1-1) sign (see Figure 2B-1) shall be used.
  - 02 The STOP sign shall be an octagon with a white legend and border on a red background.
  - 03 Secondary legends shall not be used on STOP sign faces.
  - 04 At intersections where all approaches are controlled by STOP signs (see Section 2B.07), an ALL WAY supplemental plaque (R1-3P) shall be mounted below each STOP sign. The ALL WAY plaque (see Figure 2B-1) shall have a white legend and border on a red background.
  - 05 The ALL WAY plaque shall only be used if all intersection approaches are controlled by STOP signs.
  - 06 Supplemental plaques with legends such as 2-WAY, 3-WAY, 4-WAY, or other numbers of ways shall not be used with STOP signs.

- **ALL WAY plaque required, where applicable**
- **2-WAY, 3-WAY, and 4-WAY plaques no longer permitted**



**Option:**

01 The CROSS TRAFFIC DOES NOT STOP (W4-4P) plaque (see Figure 2C-9) may be used in combination with a STOP sign when engineering judgment indicates that conditions are present that are causing or could cause drivers to misinterpret the intersection as an all-way stop.

02 Alternative messages (see Figure 2C-9) such as TRAFFIC FROM LEFT (RIGHT) DOES NOT STOP (W4-4aP) or ONCOMING TRAFFIC DOES NOT STOP (W4-4bP) may be used when such messages more accurately describe the traffic controls established at the intersection.

*Guidance:*

03 *Plaques with the appropriate alternative messages of TRAFFIC FROM LEFT (RIGHT) DOES NOT STOP or ONCOMING TRAFFIC DOES NOT STOP should be used at intersections where STOP signs control all but one approach to the intersection, unless the only non-stopped approach is from a one-way street.*

**Standard:**

04 If a W4-4P plaque or a plaque with an alternative message is used, it shall be mounted below the STOP sign.

- Use W4-4P at locations where motorists may think that an intersection is an all-way stop
- *W4-4aP and/or W4-4bP plaques should be used when all approaches except one are stop-controlled*



W4-4P



W4-4aP



W4-4bP

**Whites Ln at Whiteleysburg Rd**

Crash history indicated side-street motorists assumed all-way stop

- W4-4P installed below STOP
- **2-WAY plaque no longer permitted**



### Guidance:

- 03 *The decision to install multi-way stop control should be based on an engineering study.*
- 04 *The following criteria should be considered in the engineering study for a multi-way STOP sign installation:*
  - A. *Where traffic control signals are justified, the multi-way stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.*
  - B. *Five or more reported crashes in a 12-month period that are susceptible to correction by a multi-way stop installation. Such crashes include right-turn and left-turn collisions as well as right-angle collisions.*
  - C. *Minimum volumes:*
    1. *The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day; and*
    2. *The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour; but*
    3. *If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the values provided in Items 1 and 2.*
  - D. *Where no single criterion is satisfied, but where Criteria B, C.1, and C.2 are all satisfied to 80 percent of the minimum values. Criterion C.3 is excluded from this condition.*

- *No change in guidance for multi-way stop control*
  - *5 or more crashes (susceptible to correction) in 12-month period*
  - *Total major street volume:  $\geq 300$  vph for 8 hrs*
  - *Total minor street volume:  $\geq 200$  vph for 8 hrs*
  - *Reduction for approach speed*
  - *Reduction for combination of crash and volume criteria*



### Standard:

01 The STOP or YIELD sign shall be installed on the near side of the intersection on the right-hand side of the approach to which it applies. When the STOP or YIELD sign is installed at this required location and the sign visibility is restricted, a Stop Ahead sign (see Section 2C.36) shall be installed in advance of the STOP sign or a Yield Ahead sign (see Section 2C.36) shall be installed in advance of the YIELD sign.

02 The STOP or YIELD sign shall be located as close as practical to the intersection it regulates, while optimizing its visibility to the road user it is intended to regulate.

### Guidance:

07 STOP or YIELD signs should not be placed farther than 50 feet from the edge of the pavement of the intersected roadway (see Drawing F in Figure 2A-3).

08 A sign that is mounted back-to-back with a STOP or YIELD sign should stay within the edges of the STOP or YIELD sign. If necessary, the size of the STOP or YIELD sign should be increased so that any other sign installed back-to-back with a STOP or YIELD sign remains within the edges of the STOP or YIELD sign.



- **Shall be installed on right-hand side**
- **As close as practical to intersection, while optimizing visibility**
- *No farther than 50 ft from edge of intersecting road (i.e., does not have to be adjacent to stop line)*
- *Back-to-back signs should stay within edges of STOP or YIELD (now includes DO NOT ENTER)*

*Sign on back (Keep Right) should stay within edges of STOP*



**STOP shall be 36" x 36" on a multi-lane approach and it shall be installed on the right-hand side**

**Lantana Dr at SR 7**



*Guidance:*

12 *Stop lines that are used to supplement a STOP sign should be located as described in Section 3B.16. Yield lines that are used to supplement a YIELD sign should be located as described in Section 3B.16.*

13 *Where there is a marked crosswalk at the intersection, the STOP sign should be installed in advance of the crosswalk line nearest to the approaching traffic.*

14 *(DE Revision) Except at roundabouts and as provided in Paragraph 18A, where there is a marked crosswalk at the intersection, the YIELD sign should be installed in advance of the crosswalk line nearest to the approaching traffic.*

18A *(DE Revision) YIELD signs may be installed downstream of crosswalks at locations with large channelizing islands where the distance between the crosswalk and the downstream end of the channelizing island exceeds one vehicle length.*



- *STOP and YIELD signs should be installed in advance of marked crosswalks*
- DE Option: YIELD signs may be installed downstream of crosswalks at locations with large channelizing islands (i.e., > 1 vehicle length between crosswalk and downstream end of channelizing island)

YIELD sign installed beyond crosswalk because of large island



**SR 58 at Christiana Hospital**

**Option:**

09 Where drivers proceeding straight ahead must yield to traffic approaching from the opposite direction, such as at a one-lane bridge, a TO ONCOMING TRAFFIC (R1-2aP) plaque may be mounted below the YIELD sign.

09A (DE Revision) Where drivers must yield to U-turning traffic from another intersection approach, a TO U-TURNING TRAFFIC (R1-2aP-DE) plaque may be mounted below the YIELD sign.

09B (DE Revision) Where drivers must yield to turning traffic from another intersection approach, a TO TURNING TRAFFIC (R1-2aP-DE1) plaque may be mounted below the YIELD sign.

**Option:**

20 For a yield-controlled channelized right-turn movement onto a roadway without an acceleration lane and for an entrance ramp onto a freeway or expressway without an acceleration lane, a NO MERGE AREA (W4-5P) supplemental plaque (see Section 2C.40) may be mounted below a Yield Ahead (W3-2) sign and/or below a YIELD (R1-2) sign when engineering judgment indicates that road users would expect an acceleration lane to be present.



R1-2aP



R1-2aP-DE



R1-2aP-DE1



R1-2a-DE2



W4-5P

- Supplemental YIELD plaques
  - Reserved for special circumstances
  - NO MERGE AREA (W4-5P) warning plaque; may also be installed below Yield Ahead warning sign
  - DE Option includes two DE-only supplemental plaques

**Guidance:**

02 *If yield (stop) lines and Yield Here To (Stop Here For) Pedestrians signs are used in advance of a crosswalk that crosses an uncontrolled multi-lane approach, they should be placed 20 to 50 feet in advance of the nearest crosswalk line (see Section 3B.16 and Figure 3B-17), and parking should be prohibited in the area between the yield (stop) line and the crosswalk.*

**Option:**

04 Yield Here To (Stop Here For) Pedestrians signs may be used in advance of a crosswalk that crosses an uncontrolled multi-lane approach to indicate to road users where to yield (stop) even if yield (stop) lines are not used.

05 A Pedestrian Crossing (W11-2) warning sign may be placed overhead or may be post-mounted with a diagonal downward pointing arrow (W16-7P) plaque at the crosswalk location where Yield Here To (Stop Here For) Pedestrians signs have been installed in advance of the crosswalk.

**Standard:**

06 If a W11-2 sign has been post-mounted at the crosswalk location where a Yield Here To (Stop Here For) Pedestrians sign is used on the approach, the Yield Here To (Stop Here For) Pedestrians sign shall not be placed on the same post as or block the road user's view of the W11-2 sign.



- **R1-5 size now 36" x 36"** (previously 18" x 18")
- *Install 20 ft to 50 ft in advance of uncontrolled crosswalk*
- *Parking prohibition between yield line and crosswalk*
- New Options

- R1-5 sign without yield line

- R1-5 signs with **W11-2 assemblies** at crosswalk; **however, R1-5 signs shall not block W11-2 assemblies**

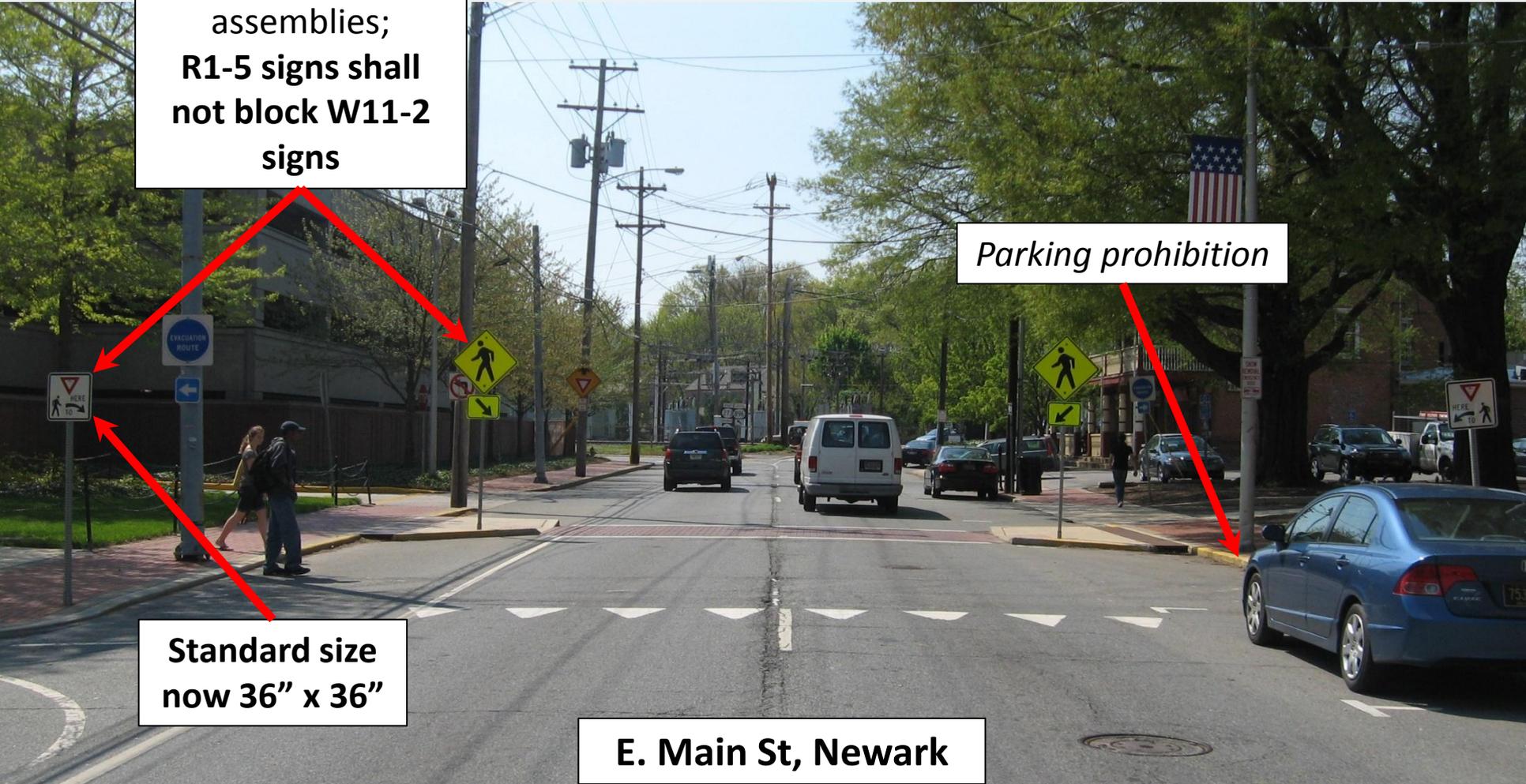


Optional W11-2  
assemblies;  
**R1-5 signs shall  
not block W11-2  
signs**

*Parking prohibition*

**Standard size  
now 36" x 36"**

**E. Main St, Newark**



01 **Speed zones (other than statutory speed limits) shall only be established on the basis of an engineering study that has been performed in accordance with traffic engineering practices. The engineering study shall include an analysis of the current speed distribution of free-flowing vehicles.**

07A (DE Revision) §4169 and 4170 of Title 21 of the Delaware Code establish policies for establishing speed limits.

10 *States and local agencies should conduct engineering studies to reevaluate non-statutory speed limits on segments of their roadways that have undergone significant changes since the last review, such as the addition or elimination of parking or driveways, changes in the number of travel lanes, changes in the configuration of bicycle lanes, changes in traffic control signal coordination, or significant changes in traffic volumes.*

11 *No more than three speed limits should be displayed on any one Speed Limit sign or assembly.*

12 *When a speed limit within a speed zone is posted, it should be within 5 mph of the 85<sup>th</sup>-percentile speed of free-flowing traffic.*

13 *Speed studies for signalized intersection approaches should be taken outside the influence area of the traffic control signal, which is generally considered to be approximately 1/2 mile, to avoid obtaining skewed results for the 85<sup>th</sup>-percentile speed.*



- Clarification of speed studies
  - **Study includes analysis of free-flow speed distribution**
  - *List of significant changes to consider reevaluating speed zones*
  - *Posted speed limit should be within 5 MPH of the free-flow 85<sup>th</sup>-percentile speed*
  - *Obtain speeds outside 1/2-mile influence area of traffic signal*

04 At the downstream end of the section to which a speed limit applies, a Speed Limit sign showing the next speed limit shall be installed. Additional Speed Limit signs shall be installed beyond major intersections and at other locations where it is necessary to remind road users of the speed limit that is applicable.

- Speed limit shall be posted downstream of speed zone
- Confirmatory Speed Limit signs shall be installed beyond major intersections



**Guidance:**

09 *(DE Revision)* A Reduced Speed Limit Ahead (W3-5) sign (see Section 2C.38) should be used to inform road users of a reduced speed zone where the speed limit is being reduced by more than 10 mph, or where engineering judgment indicates the need for advance notice to comply with the posted speed limit ahead.



- Used where speed reduction exceeds 10 MPH
- Installed in advance of downstream Speed Limit sign based on **Condition A** in Table 2C-4

**Table 2C-4. Guidelines for Advance Placement of Warning Signs**

Posted or 85th-Percentile Speed	Advance Placement Distance <sup>1</sup>								
	Condition A: Speed reduction and lane changing in heavy traffic <sup>2</sup>	Condition B: Deceleration to the listed advisory speed (mph) for the condition							
		0 <sup>3</sup>	10 <sup>4</sup>	20 <sup>4</sup>	30 <sup>4</sup>	40 <sup>4</sup>	50 <sup>4</sup>	60 <sup>4</sup>	70 <sup>4</sup>
20 mph	225 ft	100 ft <sup>6</sup>	N/A <sup>5</sup>	—	—	—	—	—	—
25 mph	325 ft	100 ft <sup>6</sup>	N/A <sup>5</sup>	N/A <sup>5</sup>	—	—	—	—	—
30 mph	460 ft	100 ft <sup>6</sup>	N/A <sup>5</sup>	N/A <sup>5</sup>	—	—	—	—	—
35 mph	565 ft	100 ft <sup>6</sup>	N/A <sup>5</sup>	N/A <sup>5</sup>	N/A <sup>5</sup>	—	—	—	—
40 mph	670 ft	125 ft	100 ft <sup>6</sup>	100 ft <sup>6</sup>	N/A <sup>5</sup>	—	—	—	—
45 mph	775 ft	175 ft	125 ft	100 ft <sup>6</sup>	100 ft <sup>6</sup>	N/A <sup>5</sup>	—	—	—
50 mph	885 ft	250 ft	200 ft	175 ft	125 ft	100 ft <sup>6</sup>	—	—	—
55 mph	990 ft	325 ft	275 ft	225 ft	200 ft	125 ft	N/A <sup>5</sup>	—	—
60 mph	1,100 ft	400 ft	350 ft	325 ft	275 ft	200 ft	100 ft <sup>6</sup>	—	—
65 mph	1,200 ft	475 ft	450 ft	400 ft	350 ft	275 ft	200 ft	100 ft <sup>6</sup>	—
70 mph	1,250 ft	550 ft	525 ft	500 ft	450 ft	375 ft	275 ft	150 ft	—
75 mph	1,350 ft	650 ft	625 ft	600 ft	550 ft	475 ft	375 ft	250 ft	100 ft <sup>6</sup>

New values based on modifications to several assumptions

**Standard:**

01 **Except as provided in Paragraphs 11 and 13, where specific movements are prohibited, Movement Prohibition signs shall be installed.**

*Guidance:*

02 *Movement Prohibition signs should be placed where they will be most easily seen by road users who might be intending to make the movement.*

03 *If No Right Turn (R3-1) signs (see Figure 2B-4) are used, at least one should be placed either over the roadway or at a right-hand corner of the intersection.*

04 *If No Left Turn (R3-2) signs (see Figure 2B-4) are used, at least one should be placed over the roadway, at the far left-hand corner of the intersection, on a median, or in conjunction with the STOP sign or YIELD sign located on the near right-hand corner.*

- **Installed where movements are prohibited**  
(unless ONE WAY signs are installed)
- *Placed where easily seen by motorists who might attempt the illegal movement*



R3-1

*Overhead or  
near right  
corner*



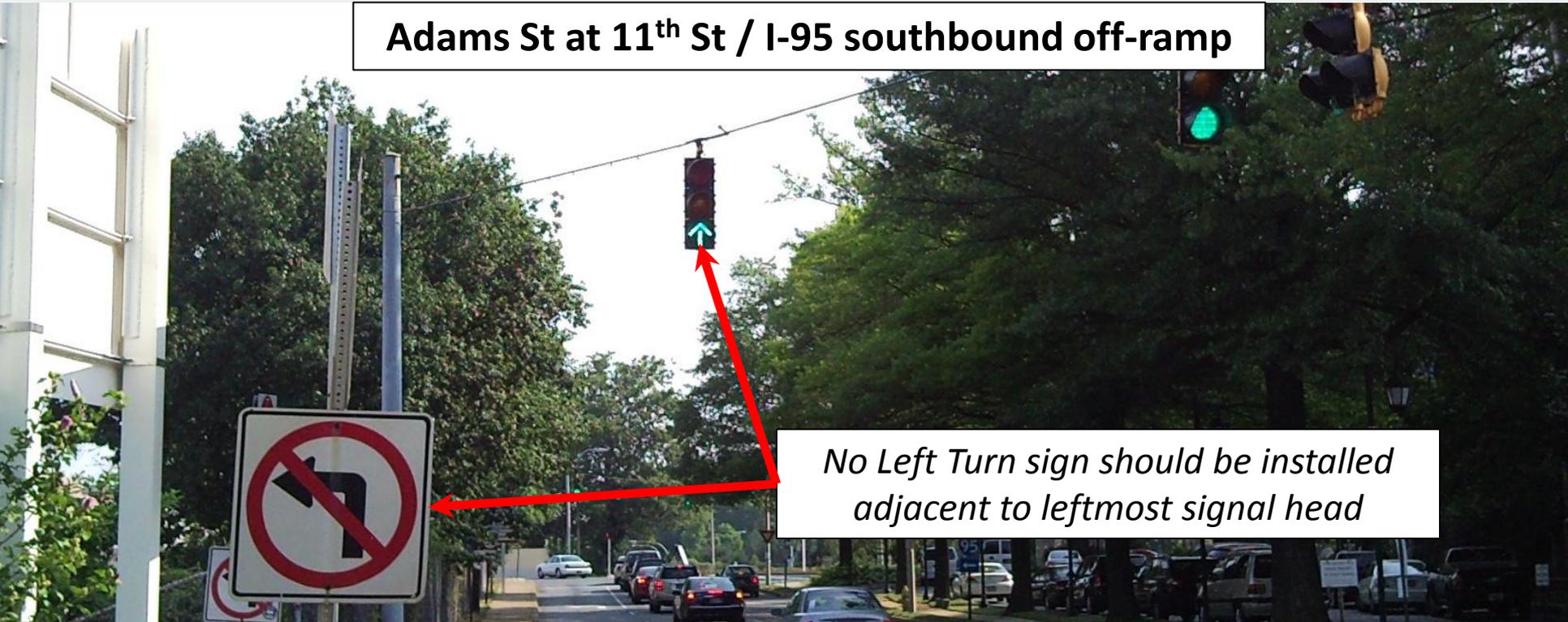
R3-2

*Overhead, far left  
corner, in median,  
or near right corner  
with STOP or YIELD*

- 09 *If turn prohibition signs are installed in conjunction with traffic control signals:*
- A. *The No Right Turn sign should be installed adjacent to a signal face viewed by road users in the right-hand lane.*
  - B. *The No Left Turn (or No U-Turn or combination No U-Turn/No Left Turn) sign should be installed adjacent to a signal face viewed by road users in the left-hand lane.*
  - C. *A NO TURNS sign should be placed adjacent to a signal face viewed by all road users on that approach, or two signs should be used.*

- *Installed overhead and adjacent to appropriate signal face(s) at signals*

Adams St at 11<sup>th</sup> St / I-95 southbound off-ramp



*No Left Turn sign should be installed adjacent to leftmost signal head*

**Standard:**

14 The No Left Turn (R3-2) sign, the No U-Turn (R3-4) sign, and the combination No U-Turn/No Left Turn (R3-18) sign shall not be used at approaches to roundabouts to prohibit drivers from turning left onto the circulatory roadway of a roundabout.



- **Shall not be used on approaches to roundabouts**

### *Guidance:*

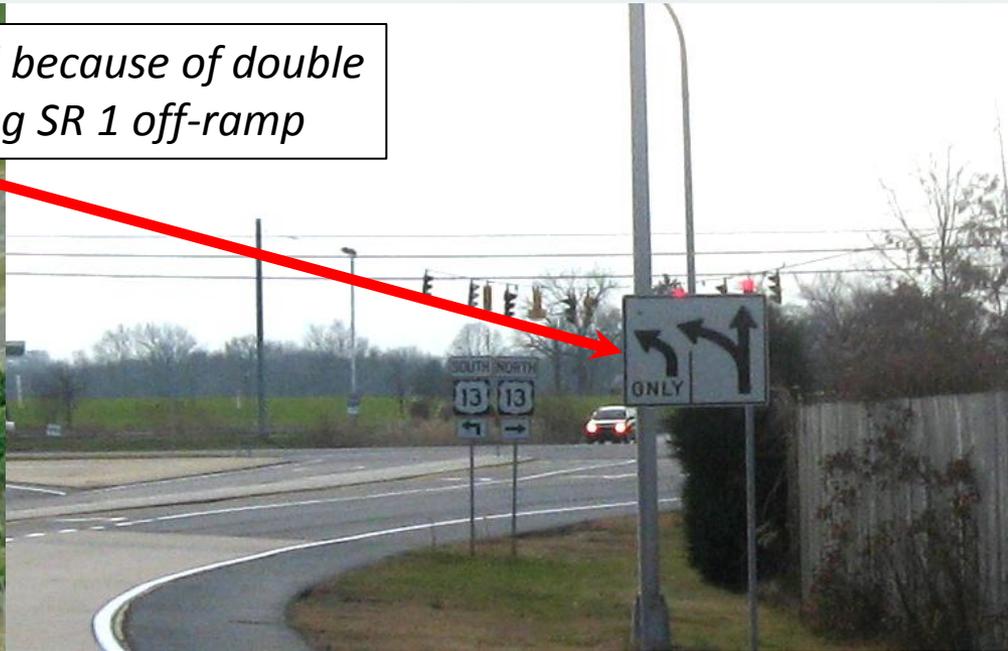
- 03 *When Intersection Lane Control signs are mounted overhead, each sign should be placed over the lane or a projection of the lane to which it applies.*
- 04 *On signalized approaches where through lanes that become mandatory turn lanes, multiple-lane turns that include shared lanes for through and turning movements, or other lane-use regulations are present that would be unexpected by unfamiliar road users, overhead lane control signs should be installed at the signalized location over the appropriate lanes or projections thereof and in advance of the intersection over the appropriate lanes.*
- 05 *Where overhead mounting on the approach is impractical for the advance and/or intersection lane-use signs, one of the following alternatives should be employed:*
- A. *At locations where through lanes become mandatory turn lanes, a mandatory movement lane control (R3-7) sign should be post-mounted on the left-hand side of the roadway where a through lane is becoming a mandatory left-turn lane on a one-way street or where a median of sufficient width for the signs is available, or on the right-hand side of the roadway where a through lane is becoming a mandatory right-turn lane.*
  - B. *At locations where a through lane is becoming a mandatory left-turn lane on a two-way street where a median of sufficient width for the signs is not available, and at locations where multiple-lane turns that include shared lanes for through and turning movements are present, an Advance Intersection Lane Control (R3-8 series) sign should be post-mounted in a prominent location in advance of the intersection, and consideration should be given to the use of an oversized version in accordance with Table 2B-1.*

### *Option:*

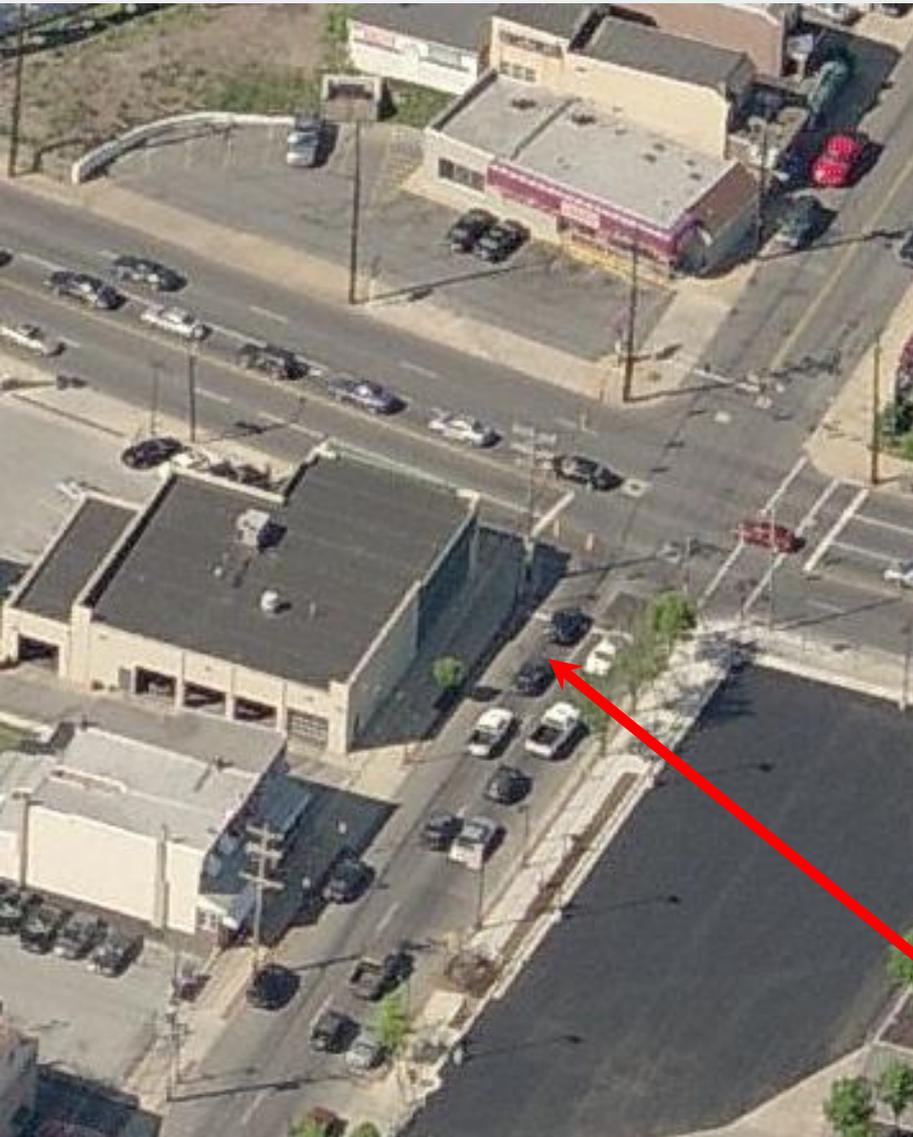
- 07 *Where the number of through lanes on an approach is two or less, the Intersection Lane Control signs (R3-5, R3-6, or R3-8) may be overhead or post-mounted.*

- *Overhead signs should be centered over lane*
- *Overhead signs at signals with lane drops or combo lanes and  $\geq 3$  through lanes*
- *Post-mounted signs with  $\leq 2$  through lanes*

*Oversized R3-8 sign installed because of double left with combo lane along SR 1 off-ramp*



**SR 1 southbound off-ramp to US 13 (Exit 119 B, North Smyrna)**



Although unconventional, R3-8 signs may be overhead with  $\leq 2$  approach lanes; **prohibited overhead along approaches with  $\geq 3$  lanes**

*Signalized lane drop should have R3-7 sign in advance of intersection on left-hand side*



**SR 2 (Lincoln St) eastbound at SR 52**

**Standard:**

- 01 If used, the Mandatory Movement Lane Control (R3-5, R3-5a, and R3-7) sign (see Figure 2B-4) shall indicate only the single vehicle movement that is required from the lane. If used, the Mandatory Movement Lane Control sign shall be located in advance of the intersection, such as near the upstream end of the mandatory movement lane, and/or at the intersection where the regulation applies. When the mandatory movement applies to lanes exclusively designated for HOV traffic, the R3-5cP supplemental plaque shall be used. When the mandatory movement applies to lanes that are not HOV facilities, but are lanes exclusively designated for buses and/or taxis, the word message R3-5dP and/or R3-5gP supplemental plaques shall be used.
- 02 The Mandatory Movement Lane Control (R3-7) sign shall include the legend RIGHT (LEFT) LANE MUST TURN RIGHT (LEFT). The Mandatory Movement Lane Control (R3-5 and R3-5a) symbol signs shall include the legend ONLY.
- 03 The R3-7 word message sign shall be for post-mounting only.
- 04 Where the number of lanes available to through traffic on an approach is three or more, Mandatory Movement Lane Control (R3-5 and R3-5a) symbol signs, if used, shall be mounted overhead over the specific lanes to which they apply (see Section 2B.19).

- **Located in advance of intersection or at intersection**
- **R3-7 signs for post-mounting only**
- **Overhead R3-5 and R3-5a signs for approaches with  $\geq 3$  through lanes**



R3-7



R3-5



R3-5a

**Guidance:**

- 05 *If the R3-5 or R3-5a sign is post-mounted on an approach with two or fewer through lanes, a supplemental plaque (see Figure 2B-4), such as LEFT LANE (R3-5bP), HOV 2+ (R3-5cP), TAXI LANE (R3-5dP), CENTER LANE (R3-5eP), RIGHT LANE (R3-5fP), BUS LANE (R3-5gP), or BOTH LANES, should be added above the sign to indicate the specific lane to which the mandatory movement applies. If Mandatory Lane Movement Control (R3-5) symbol signs with supplemental R3-5bP or R3-5fP plaques are used, they should be mounted adjacent to and along only the full width portion of the turn lane.*
- 06 *The use of the Mandatory Movement Lane Control (R3-7) word message sign should be limited to only locations that are adjacent to the full-width portion of a mandatory turn lane. The R3-7 sign should not be installed adjacent to a through lane in advance of a turn bay taper or adjacent to a turn bay taper.*
- 07 *Mandatory Movement Lane Control signs should be accompanied by lane-use arrow markings, especially where traffic volumes are high, where there is a high percentage of commercial vehicles, or where other distractions exist.*

- *Plaques should be used with post-mounted R3-5 and R3-5a signs*
- *R3-7 signs should be adjacent to full-width turn lane, not in advance or along taper*
- *Pavement marking arrows should be installed to supplement signs*



*Should not be adjacent to through lane*



**Salem Church Rd south of Chapman Rd**

*Should not be adjacent to taper*



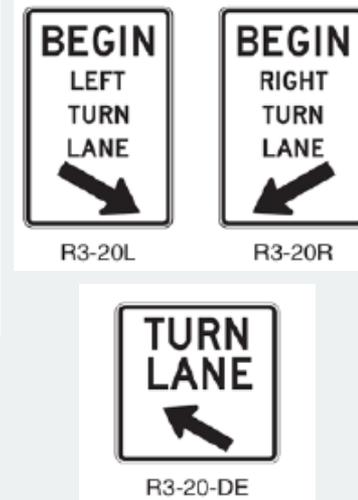
*Should have lane arrow marking*

**Salem Church Rd north of Chapman Rd**

11 (DE Revision) The BEGIN RIGHT TURN LANE (R3-20R) sign (see Figure 2B-4) may be post-mounted on the right-hand side of the roadway at the upstream end of the turn lane taper of a mandatory right-turn lane. The BEGIN LEFT TURN LANE (R3-20L) sign or TURN LANE (R3-20-DE) sign (see Figure 2B-4) may be post-mounted on a median (or on the left-hand side of the roadway for a one-way street) at the upstream end of the turn lane taper of a mandatory left-turn lane.

*Guidance:*

11A (DE Revision) The TURN LANE (R3-20-DE) sign should be post-mounted on the left-hand side of the roadway at the upstream end of the turn lane taper of a mandatory left-turn lane along multi-lane divided roadways.



- New optional turn lane signs
- DE Guidance: *TURN LANE signs at start of left-turn taper along multi-lane divided highways*



*Should be installed along multi-lane divided highways*

**US 13 north of Duck Creek Rd**

**Standard:**

- 01 If used, the Optional Movement Lane Control (R3-6) sign (see Figure 2B-4) shall be used for two or more movements from a specific lane or to emphasize permitted movements. If used, the Optional Movement Lane Control sign shall be located in advance of the intersection, such as near the upstream end of an adjacent mandatory movement lane, and/or at the intersection where the regulation applies.
- 02 If used, the Optional Movement Lane Control sign shall indicate all permissible movements from specific lanes.
- 03 Optional Movement Lane Control signs shall be used for two or more movements from a specific lane where a movement, not normally allowed, is permitted.
- 04 The Optional Movement Lane Control sign shall not be used alone to effect a turn prohibition.
- 05 Where the number of lanes available to through traffic on an approach is three or more, an Optional Movement Lane Control (R3-6) sign, if used, shall be mounted overhead over the specific lane to which it applies (see Section 2B.19).

*Guidance:*

06 *If the Optional Movement Lane Control sign is post-mounted on an approach with two or fewer through lanes, a supplemental plaque (see Figure 2B-4), such as LEFT LANE (R3-5bP), HOV 2+ (R3-5cP), TAXI LANE (R3-5dP), CENTER LANE (R3-5eP), RIGHT LANE (R3-5fP), or BUS LANE (R3-5gP), should be added above the R3-6 sign to indicate the specific lane from which the optional movements can be made.*



R3-6



Not "OK" in DE

- **Located in advance of intersection or at intersection**
- **Overhead installation for approaches with  $\geq 3$  through lanes**
- *Plaques should be used with post-mounted signs*



R3-5bP

**Guidance:**

03 *If used, an Advance Intersection Lane Control sign should be placed at an adequate distance in advance of the intersection so that road users can select the appropriate lane (see Figure 2A-4). If used, the Advance Intersection Lane Control sign should be installed either in advance of the tapers or at the beginning of the turn lane.*

**Option:**

04 An Advance Intersection Lane Control sign may be repeated closer to the intersection for additional emphasis.

**Standard:**

05 **Where three or more approach lanes are available to traffic, Advance Intersection Lane Control (R3-8 series) signs, if used, shall be post-mounted in advance of the intersection and shall not be mounted overhead (see Section 2B.19).**



R3-8

OR



R3-8a



R3-8b

- *Installed in advance of tapers or at beginning of turn lane*
- May be repeated for additional emphasis
- **Overhead installation prohibited with  $\geq 3$  approach lanes**

**Guidance:**

01 *Two-Way Left Turn Only (R3-9a or R3-9b) signs (see Figure 2B-6) should be used in conjunction with the required pavement markings where a non-reversible lane is reserved for the exclusive use of left-turning vehicles in either direction and is not used for passing, overtaking, or through travel.*

**Option:**

02 The post-mounted R3-9b sign may be used as an alternate to or a supplement to the overhead R3-9a sign. The legend BEGIN or END may be used within the border of the main sign itself, or on an R3-9cP or R3-9dP plaque (see Figure 2B-6) mounted immediately above it.



R3-9a



R3-9b

- *Installed in conjunction with the required pavement markings*



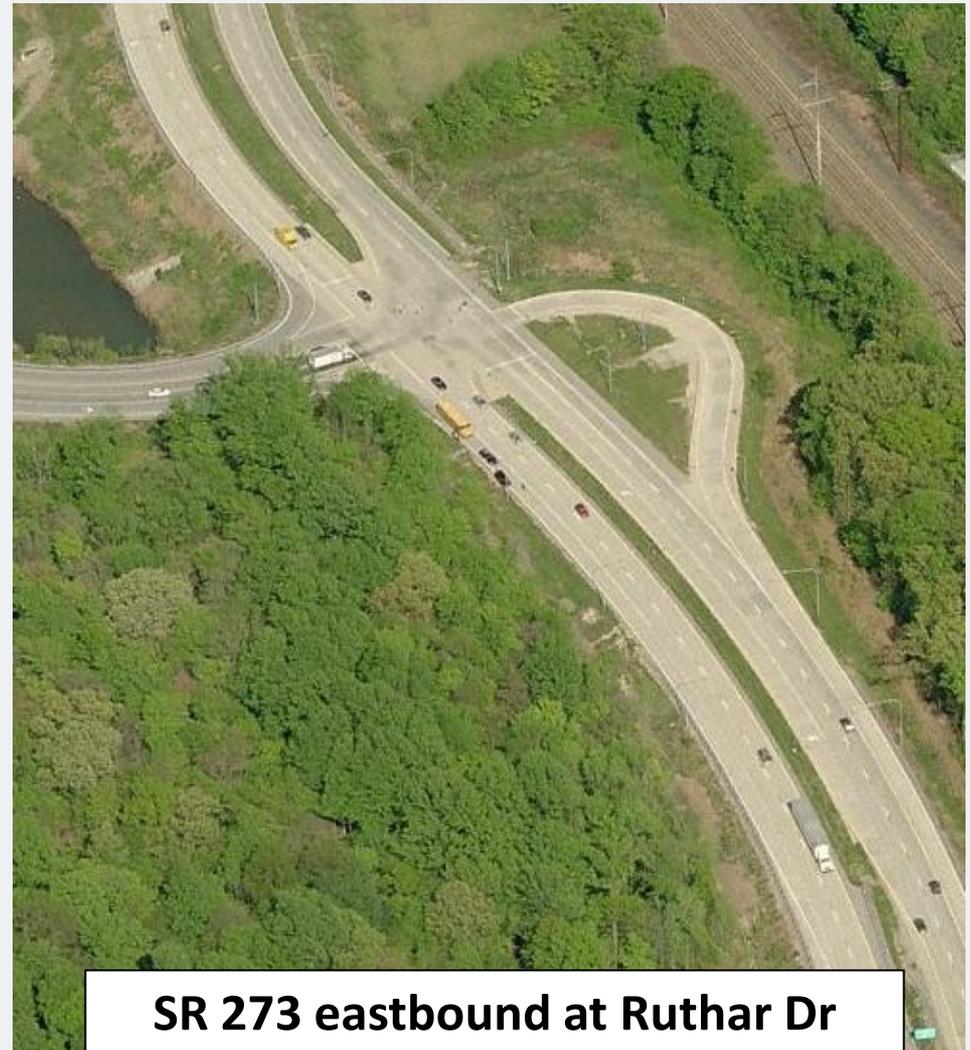
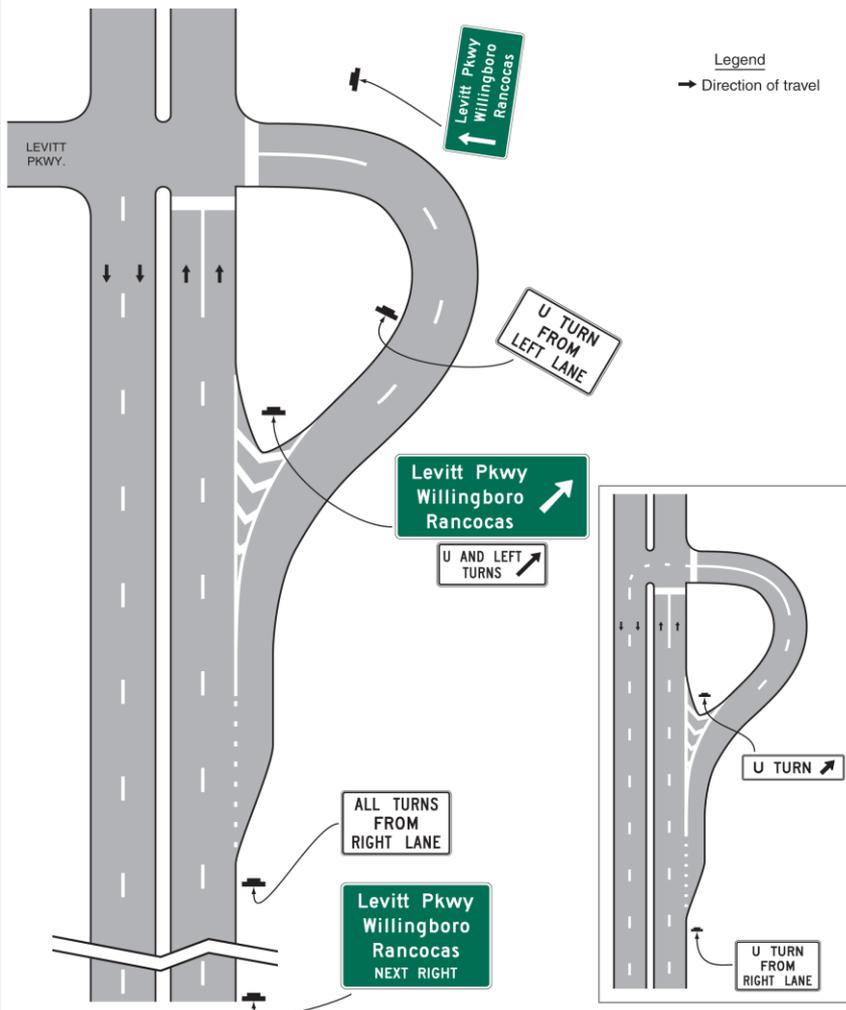
*R3-9b sign should be adjacent to two-way left-turn lane pavement markings*

**SR 300 west of US 13**

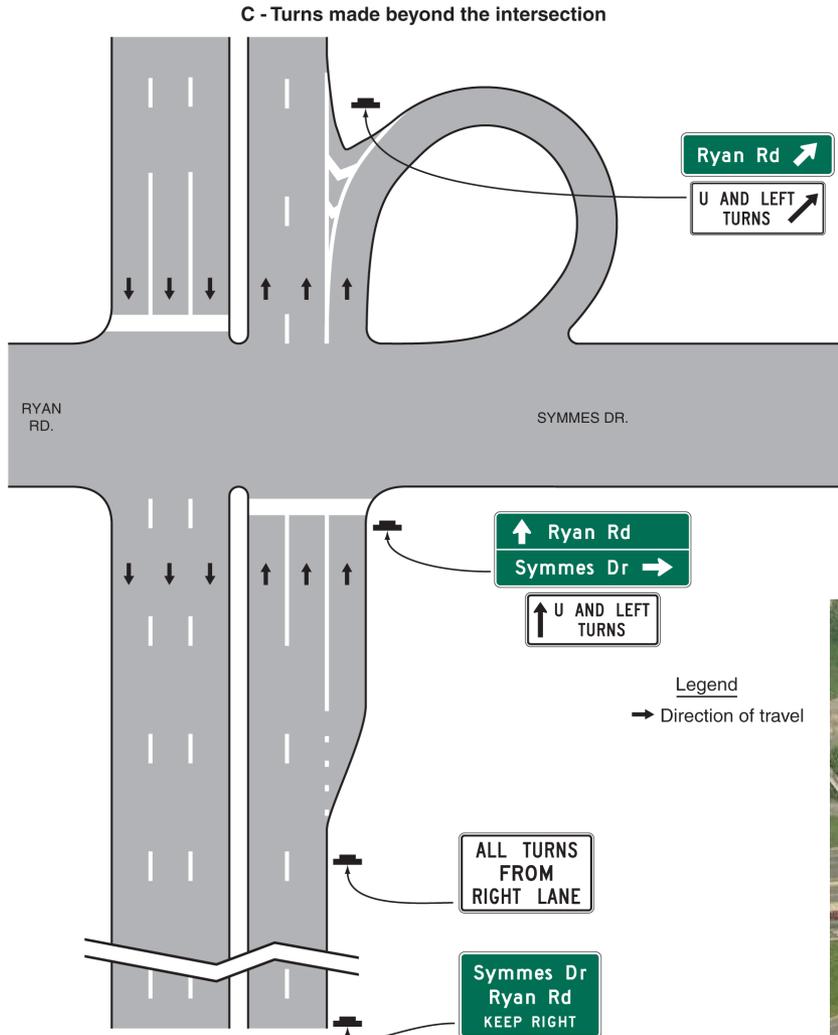
- New section with figures depicting regulatory and guide signs

Figure 2B-9. Examples of Applications of Jughandle Regulatory and Guide Signing  
(Sheet 2 of 3)

B - Traditional jughandle



**Figure 2B-9. Examples of Applications of Jughandle Regulatory and Guide Signing**  
(Sheet 3 of 3)



**SR 896 northbound at  
Chestnut Hill Rd**



**US 9 eastbound at SR 1**

*Guidance:*

01A (DE Revision) *The Keep Right sign should be installed at median openings along divided highways on both approach ends where the median width is greater than or equal to 4 feet and less than 18 feet (see Figure 2B-16).*

*Option:*

01B (DE Revision) *The Keep Right sign may be installed at median openings along divided highways on both approach ends where the median width is greater than or equal to 18 feet and less than 30 feet.*

*Guidance:*

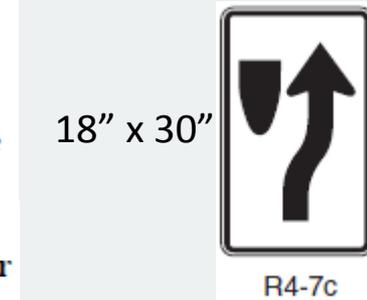
02 *At locations where it is not readily apparent that traffic is required to keep to the right, a Keep Right sign should be used.*

03 *If used, the Keep Right sign should be installed as close as practical to approach ends of raised medians, parkways, islands, and underpass piers. The sign should be mounted on the face of or just in front of a pier or other obstruction separating opposite directions of traffic in the center of the highway such that traffic will have to pass to the right-hand side of the sign.*

**Standard:**

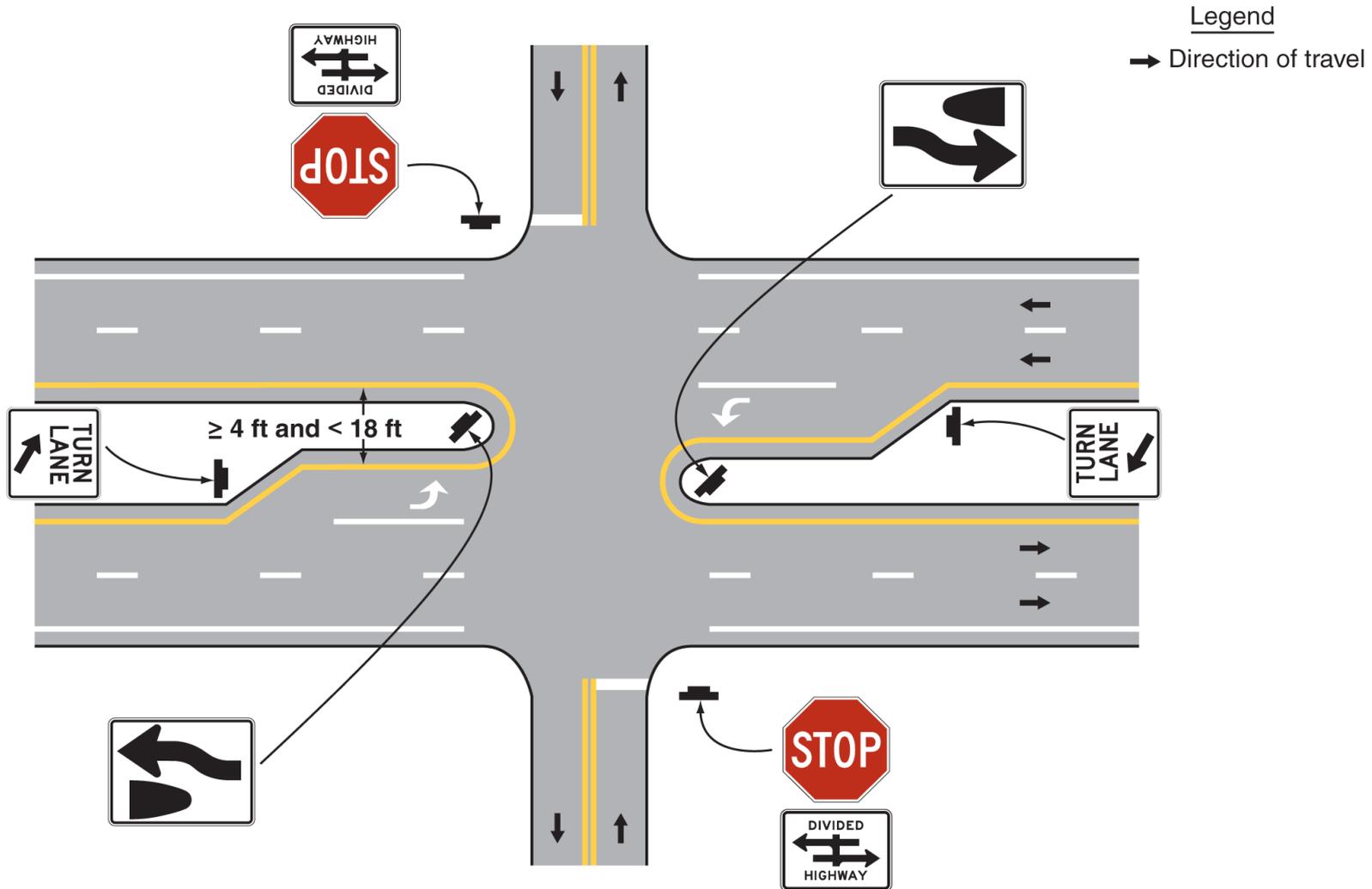
09 **A narrow Keep Right (R4-7c) sign shall not be installed on a median island that has a width of 4 feet or more at the point where the sign is to be located.**

04 **At an intersection with a divided highway that has a median width at the intersection itself of less than 30 feet, Keep Right (R4-7) signs and/or ONE WAY signs shall be installed (see Figures 2B-16, 2B-16A, 2B-17, and 2B-17A). If Keep Right signs are installed, they shall be placed as close as practical to the approach ends of the medians and shall be visible to traffic on the divided highway and each crossroad approach. If ONE WAY signs are installed, they shall be placed on the near right and far left corners of the intersection and shall be visible to each crossroad approach. (From Section 2B.40)**



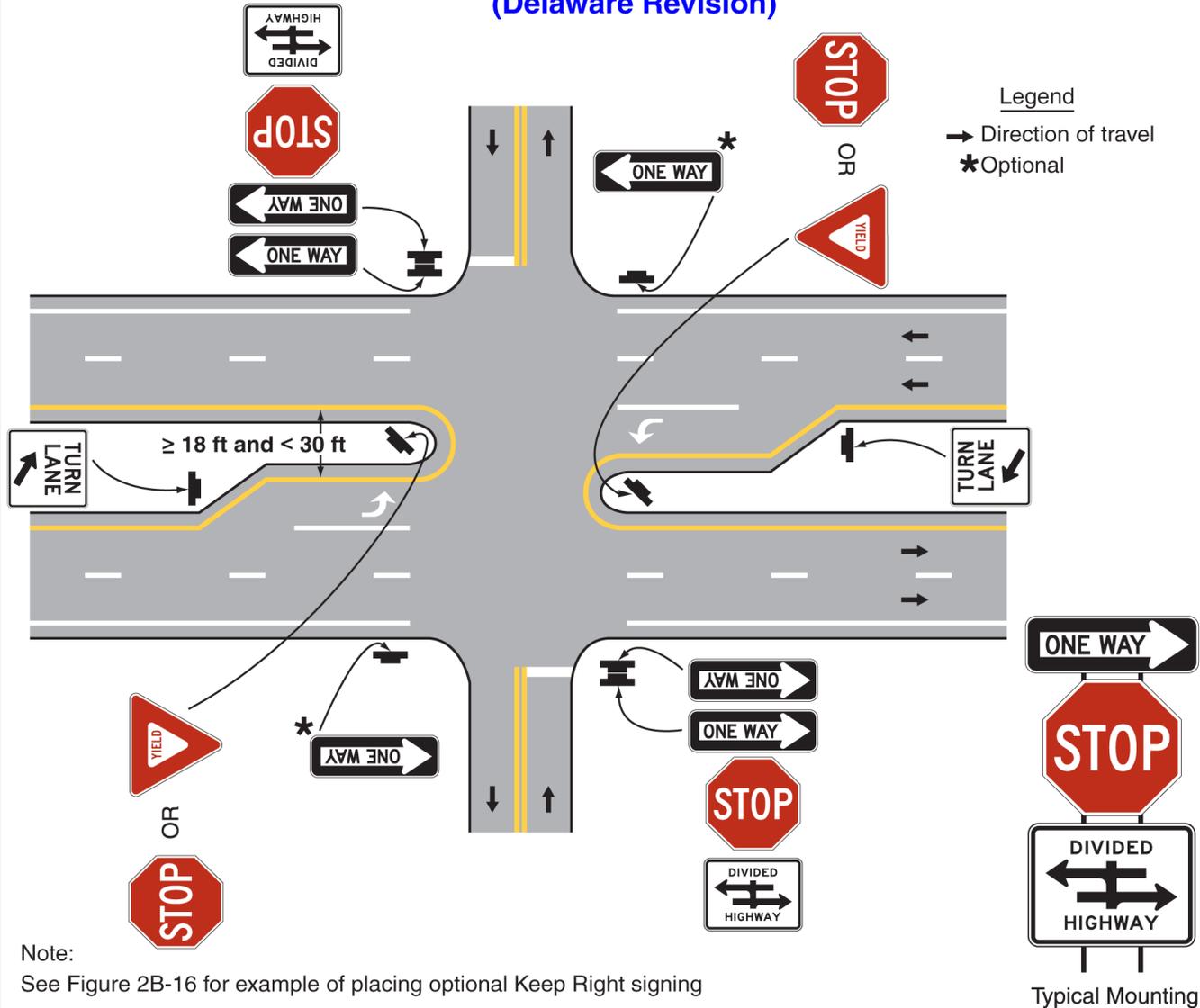
- *Installed as close as practical to approach end of median*
- Optional narrow Keep Right (R4-7c) for medians < 4 ft wide
- **Keep Right or ONE WAY at median openings < 30 ft wide**
- DE Guidance: *Keep Right at median widths  $\geq$  4 ft and < 18 ft*
- DE Option: *Optional Keep Right at median widths  $\geq$  18 ft and < 30 ft*

**Figure 2B-16. Keep Right, TURN LANE, and Divided Highway Crossing Signing for Median Openings along Divided Highways with Median Widths  $\geq 4$  Feet and  $< 18$  Feet (Delaware Revision)**



**Figure 2B-16A. ONE WAY, TURN LANE, and Divided Highway Crossing Signing for Median Openings along Divided Highways with Median Widths  $\geq 18$  Feet and  $< 30$  Feet**

**(Delaware Revision)**



### Option:

01 A STAY IN LANE (R4-9) sign (see Figure 2B-10) may be used on multi-lane highways to direct road users to stay in their lane until conditions permit shifting to another lane.

### Guidance:

02 *If a STAY IN LANE sign is used, it should be accompanied by a double solid white lane line(s) to prohibit lane changing.*

- May be used to prevent lane changes (e.g., high-speed E-ZPass lanes and MOT lane shifts)
- *Double solid white lines adjacent to sign*



Option:

- 01 The DO NOT DRIVE ON SHOULDER (R4-17) sign (see Figure 2B-10) may be installed to inform road users that using the shoulder of a roadway as a travel lane is prohibited.
- 02 The DO NOT PASS ON SHOULDER (R4-18) sign (see Figure 2B-10) may be installed to inform road users that using the shoulder of a roadway to pass other vehicles is prohibited.

- New sign legends for common sign



No longer using this sign legend

SR 4 eastbound approaching SR 7



## Standard:

01 **The DO NOT ENTER (R5-1) sign (see Figure 2B-11) shall be used where traffic is prohibited from entering a restricted roadway.**

## Guidance:

02 *(DE Revision) The DO NOT ENTER sign, if used, should be placed directly in view of a road user at the point where a road user could wrongly enter a divided highway, one-way roadway, or ramp (see Figures 2B-12 and 2B-12A). The sign should be mounted on the right-hand side of the roadway, facing traffic that might enter the roadway or ramp in the wrong direction.*

03 *If the DO NOT ENTER sign would be visible to traffic to which it does not apply, the sign should be turned away from, or shielded from, the view of that traffic.*

03A *(DE Revision) DO NOT ENTER (R5-1) signs (see Figure 2B-12) should be installed on both the right-hand and left-hand side of the roadway, facing traffic that might enter the roadway in the wrong direction at intersections of divided highways with state-maintained roadways (excluding subdivision streets) where the median width is greater than 30 feet (see Figure 2B-12).*

03B *(DE Revision) A DO NOT ENTER (R5-1) sign should be installed on the right-hand side of the roadway, facing traffic that might enter the roadway in the wrong direction at intersections of divided highways with subdivision streets, non-DelDOT owned roadways, private driveways, and median U-turn openings where the median width is greater than 30 feet (see Figure 2B-12A).*

## Option:

05 *(DE Revision) A second DO NOT ENTER sign on the left-hand side of the roadway may be used, particularly where traffic approaches from an intersecting roadway (see Figure 2B-12A).*



- **Used where traffic is prohibited from entering a restricted roadway**
- DE Guidance: *Two R5-1 signs at intersections of divided highways with state-maintained roads and median widths  $\geq 30$  ft*
- DE Option: R5-1 sign in median is optional at intersections of divided highways with subdivision streets, U-turn openings, and private driveways and median widths  $\geq 30$  ft

**Option:**

01 The WRONG WAY (R5-1a) sign (see Figure 2B-11) may be used as a supplement to the DO NOT ENTER sign where an exit ramp intersects a crossroad or a crossroad intersects a one-way roadway in a manner that does not physically discourage or prevent wrong-way entry (see Figure 2B-12).

**Guidance:**

02 *If used, the WRONG WAY sign should be placed at a location along the exit ramp or the one-way roadway farther from the crossroad than the DO NOT ENTER sign (see Section 2B.41).*

02A *(DE Revision) A WRONG WAY (R5-1a) sign should be installed on the right-hand side of the roadway, facing traffic that might enter the roadway in the wrong direction at intersections of divided highways with state-maintained roadways (excluding subdivision streets) where the median width is greater than 30 feet (see Figure 2B-12).*

**Option:**

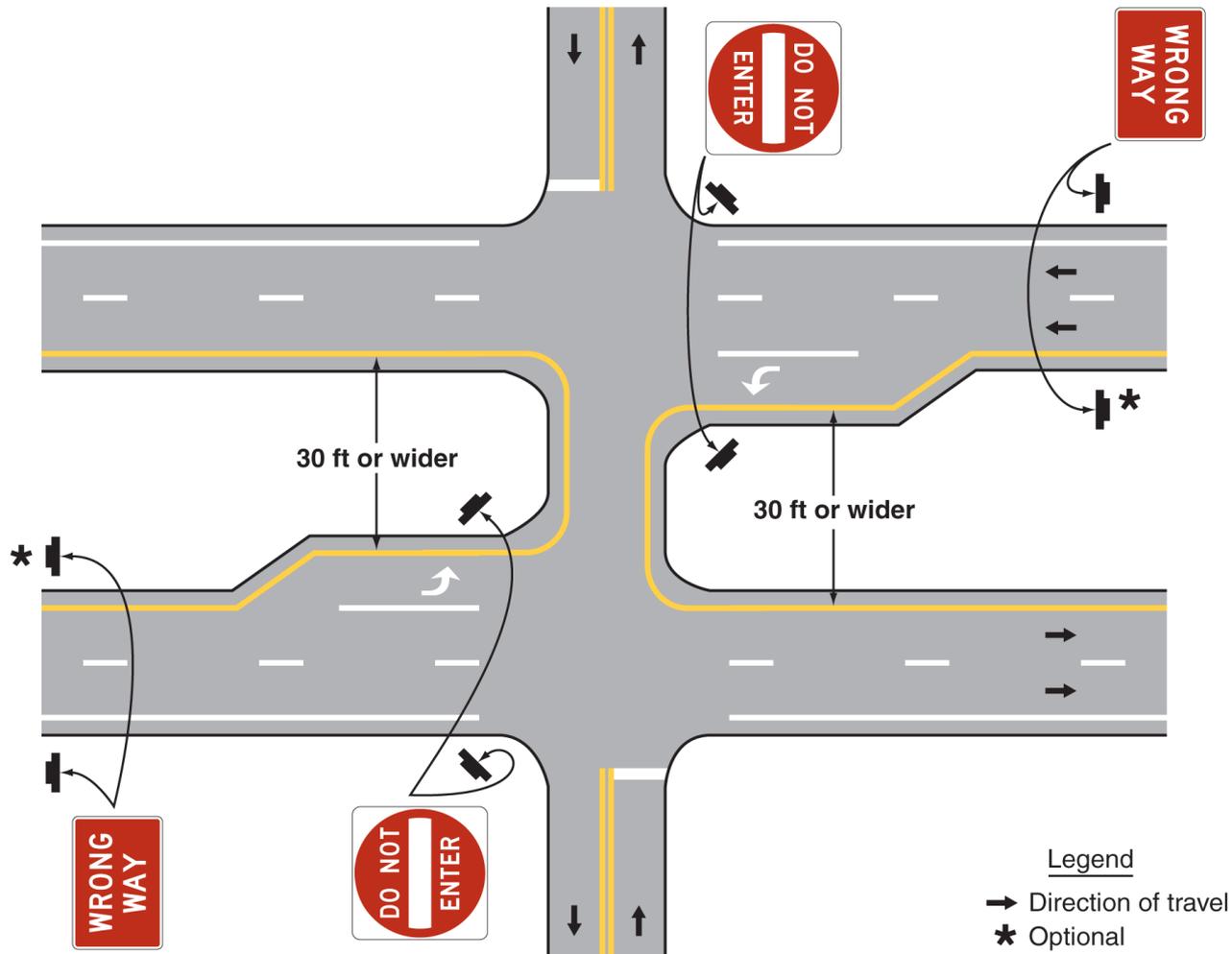
02B *(DE Revision) A WRONG WAY (R5-1a) sign may be installed on the left-hand side of the roadway, facing traffic that might enter the roadway in the wrong direction to supplement a WRONG WAY sign installed on the right-hand side of the roadway (see Figure 2B-12).*



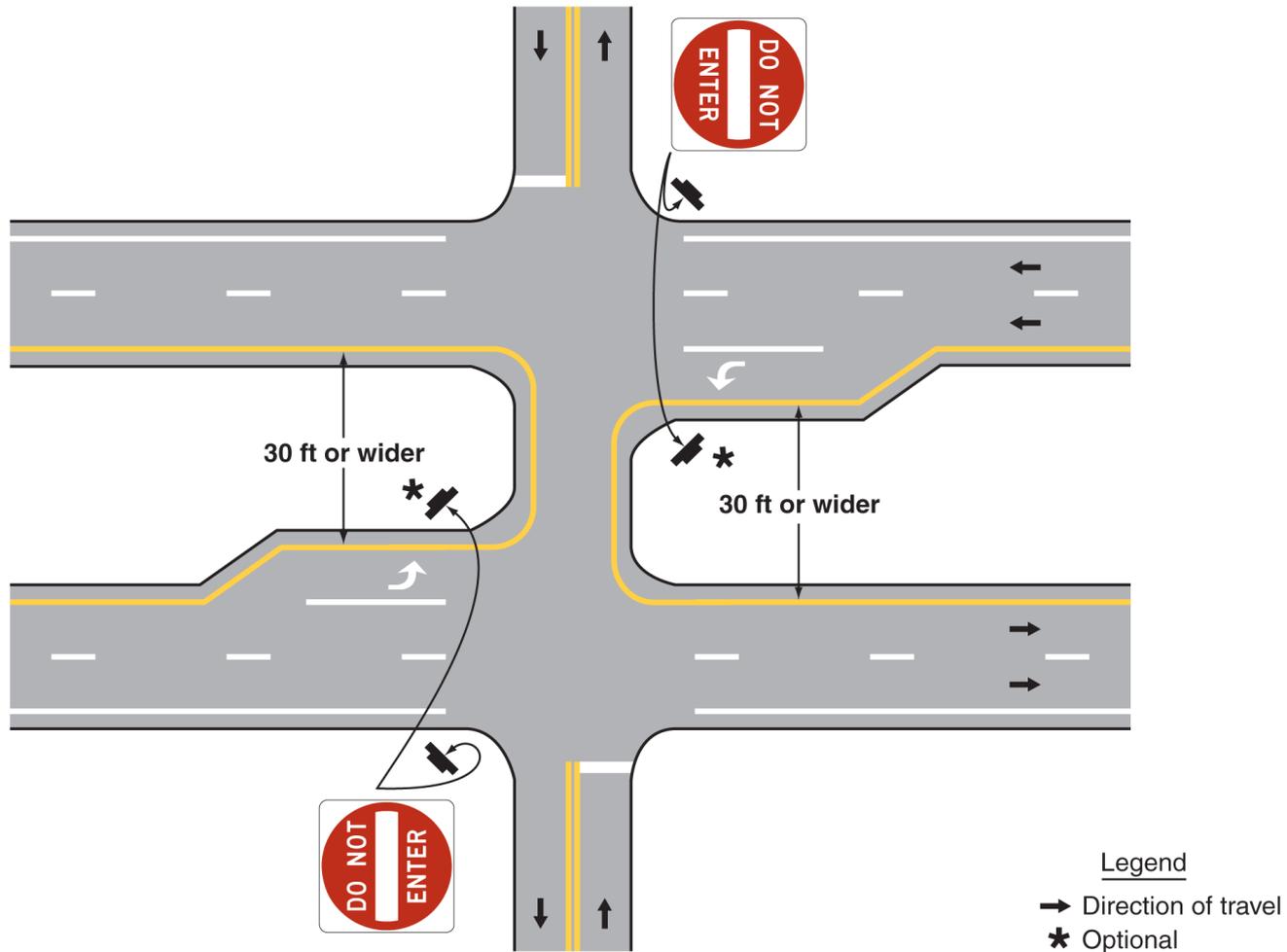
R5-1a

- Supplements DO NOT ENTER sign
- *Installed farther downstream (with respect to a vehicle travelling in the wrong direction) than DO NOT ENTER*
- *DE Guidance: At least one R5-1a sign at intersections of divided highways with state-maintained roads and median widths  $\geq 30$  ft*

**Figure 2B-12. Locations of Do Not Enter and Wrong-Way Signing for Median Openings along Divided Highways with Median Widths of 30 Feet or Wider Intersections of Divided Highways with State-Maintained Roadways (excluding Subdivision Streets)**  
**(Delaware Revision)**



**Figure 2B-12A. Locations of Do Not Enter Signing for Median Openings along Divided Highways with Median Widths of 30 Feet or Wider Intersections of Divided Highways with Subdivision Streets, Non-DelDOT Owned Roadways, Private Driveways, and Median U-Turn Openings (Delaware Revision)**



**Standard:**

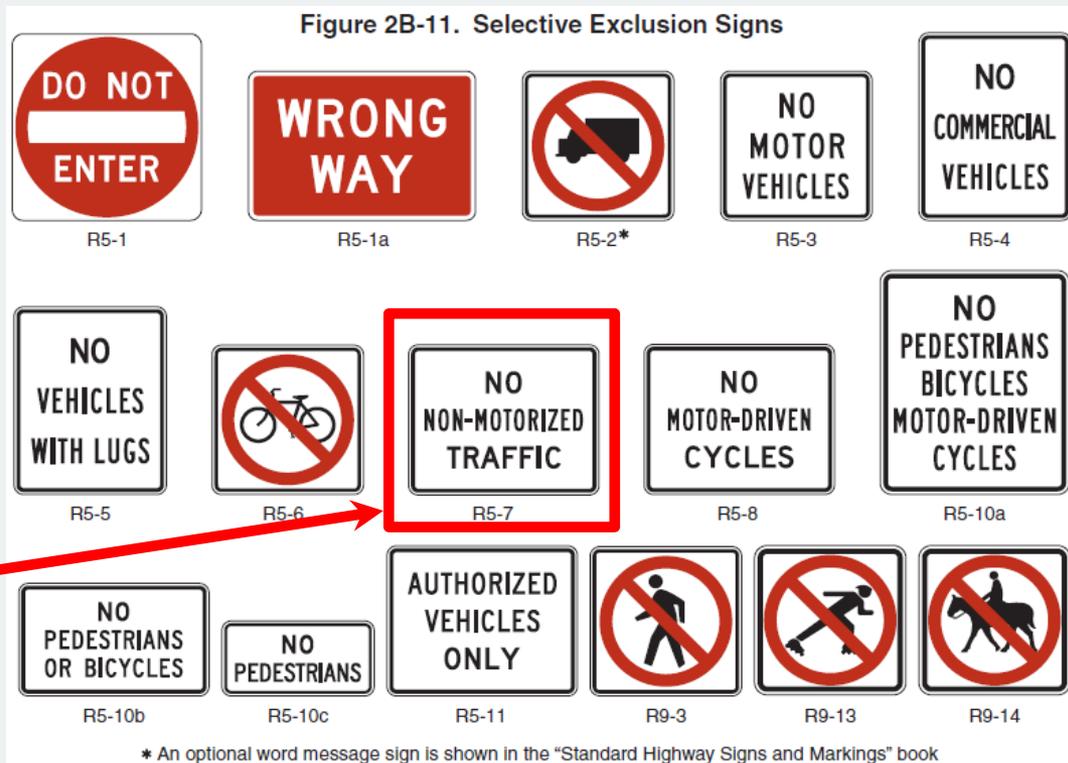
02 If used, Selective Exclusion signs shall clearly indicate the type of traffic that is excluded.

02A (DE Revision) §179 of Title 17 of the Delaware Code states that **notice of prohibition of use of controlled-access facilities by specific classes of motor-driven vehicles or other vehicles shall be posted on traffic-control devices at the entrances to controlled-access facilities.**

*Guidance:*

04A (DE Revision) A *NO NON-MOTORIZED TRAFFIC (R5-7)* sign (see Figure 2B-11) should be posted at the entrance to controlled-access facilities per §179 of Title 17 of the Delaware Code.

- **DE Code requires posting prohibitions at entrances (i.e., on-ramps) to controlled-access facilities**
- DE Guidance: *NO NON-MOTORIZED TRAFFIC sign should be used*



**Standard:**

01 Except as provided in Paragraph 6, the ONE WAY (R6-1 or R6-2) sign (see Figure 2B-13) shall be used to indicate streets or roadways upon which vehicular traffic is allowed to travel in one direction only.

02 ONE WAY signs shall be placed parallel to the one-way street at all alleys and roadways that intersect one-way roadways as shown in Figure 2B-14.

03 At an intersection with a divided highway that has a median width at the intersection itself of 30 feet or more, ONE WAY signs shall be placed, visible to each crossroad approach, on the near right and far left corners of each intersection with the directional roadways (see Figure 2B-15).

04 At an intersection with a divided highway that has a median width at the intersection itself of less than 30 feet, Keep Right (R4-7) signs and/or ONE WAY signs shall be installed (see Figures 2B-16, 2B-16A, 2B-17, and 2B-17A). If Keep Right signs are installed, they shall be placed as close as practical to the approach ends of the medians and shall be visible to traffic on the divided highway and each crossroad approach. If ONE WAY signs are installed, they shall be placed on the near right and far left corners of the intersection and shall be visible to each crossroad approach.

**Guidance:**

04B (DE Revision) At an intersection with a divided highway that has a median width at the intersection itself of greater than or equal to 18 feet and less than 30 feet, ONE WAY signs should be installed (see Figures 2B-16A and 2B-17A) on the near right and far left corners of the intersection and should be visible to each crossroad approach.



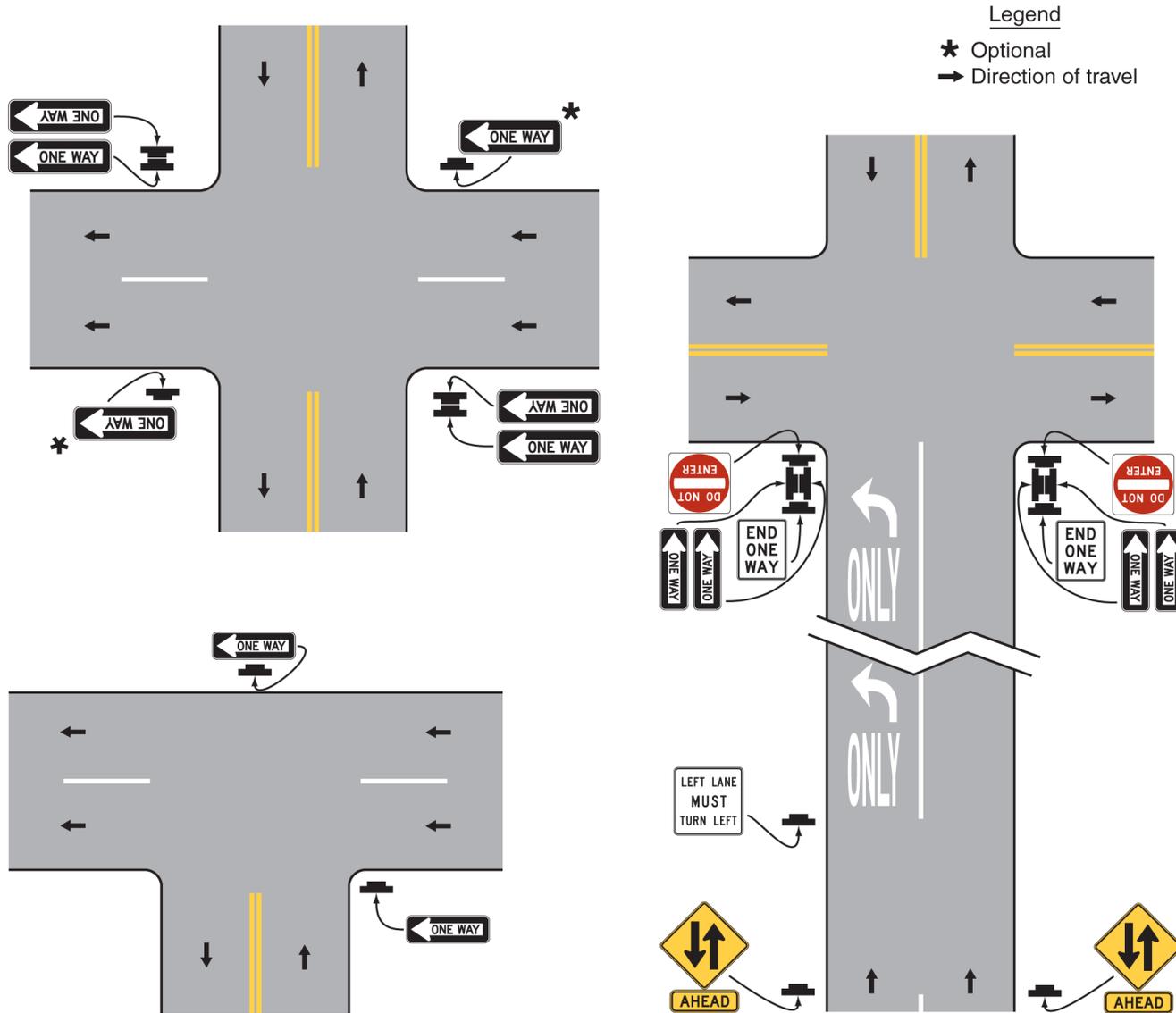
R6-1



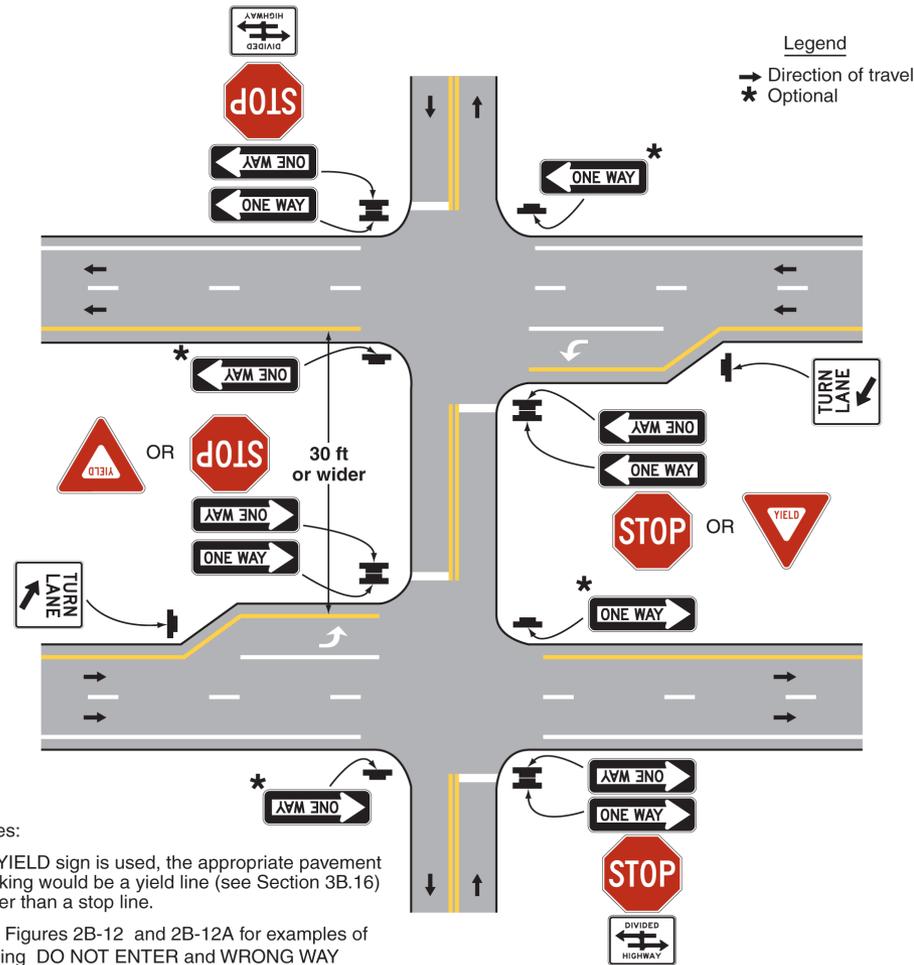
R6-2

- **Used where travel is in one direction only**
- **Intersections along divided highways with median widths  $\geq 30$  ft**
- DE Guidance: *Intersections along divided highways with median widths  $\geq 18$  ft and  $< 30$  ft*
- **Near right and far left corners of intersection**

**Figure 2B-14. Locations of ONE WAY Signs**



**Figure 2B-15. ONE WAY, TURN LANE, and Divided Highway Crossing Signing for Median Openings along Divided Highways with Median Widths of 30 Feet or Wider (Delaware Revision)**



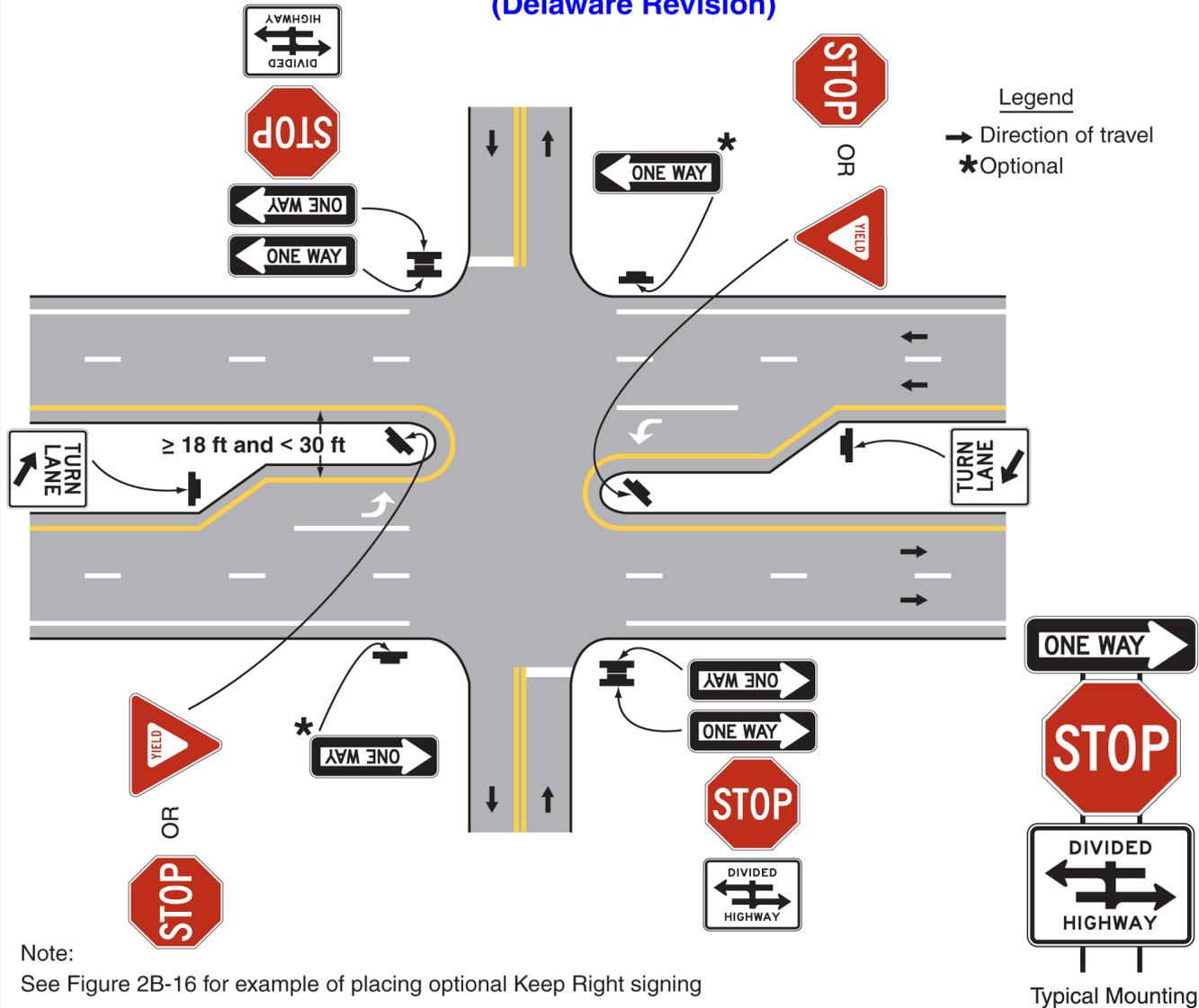
**Notes:**

If a YIELD sign is used, the appropriate pavement marking would be a yield line (see Section 3B.16) rather than a stop line.

See Figures 2B-12 and 2B-12A for examples of placing DO NOT ENTER and WRONG WAY signing.

Double yellow center line should be placed in the median if the median width is greater than or equal to 50 ft. Engineering judgement should be used to determine whether a double yellow center line should be placed in the median if the median width is greater than or equal to 30 ft and less than 50 ft.

**Figure 2B-16A. ONE WAY, TURN LANE, and Divided Highway Crossing Signing for Median Openings along Divided Highways with Median Widths  $\geq 18$  Feet and  $< 30$  Feet (Delaware Revision)**



**Standard:**

01 **At interchange exit ramp terminals where the ramp intersects a crossroad in such a manner that wrong-way entry could inadvertently be made, the following signs shall be used (see Figure 2B-18):**

- A. At least one **ONE WAY** sign for each direction of travel on the crossroad shall be placed where the exit ramp intersects the crossroad.
- B. At least one **DO NOT ENTER** sign shall be conspicuously placed near the downstream end of the exit ramp in positions appropriate for full view of a road user starting to enter wrongly from the crossroad.
- C. At least one **WRONG WAY** sign shall be placed on the exit ramp facing a road user traveling in the wrong direction.

**Guidance:**

01A *(DE Revision) At interchange exit ramp terminals where the ramp intersects a crossroad in such a manner that wrong-way entry could inadvertently be made, the following signs should be used (see Figure 2B-18):*

- A. *An additional DO NOT ENTER sign should be used.*
- B. *An additional WRONG WAY sign should be used.*

- **At least one ONE WAY, DO NOT ENTER, and WRONG WAY sign**
- *Double yellow center line (i.e., no passing zone) approaching off-ramp*
- *Lane arrow at downstream end of off-ramp*
- *DE Guidance: Two DO NOT ENTER and WRONG WAY signs*

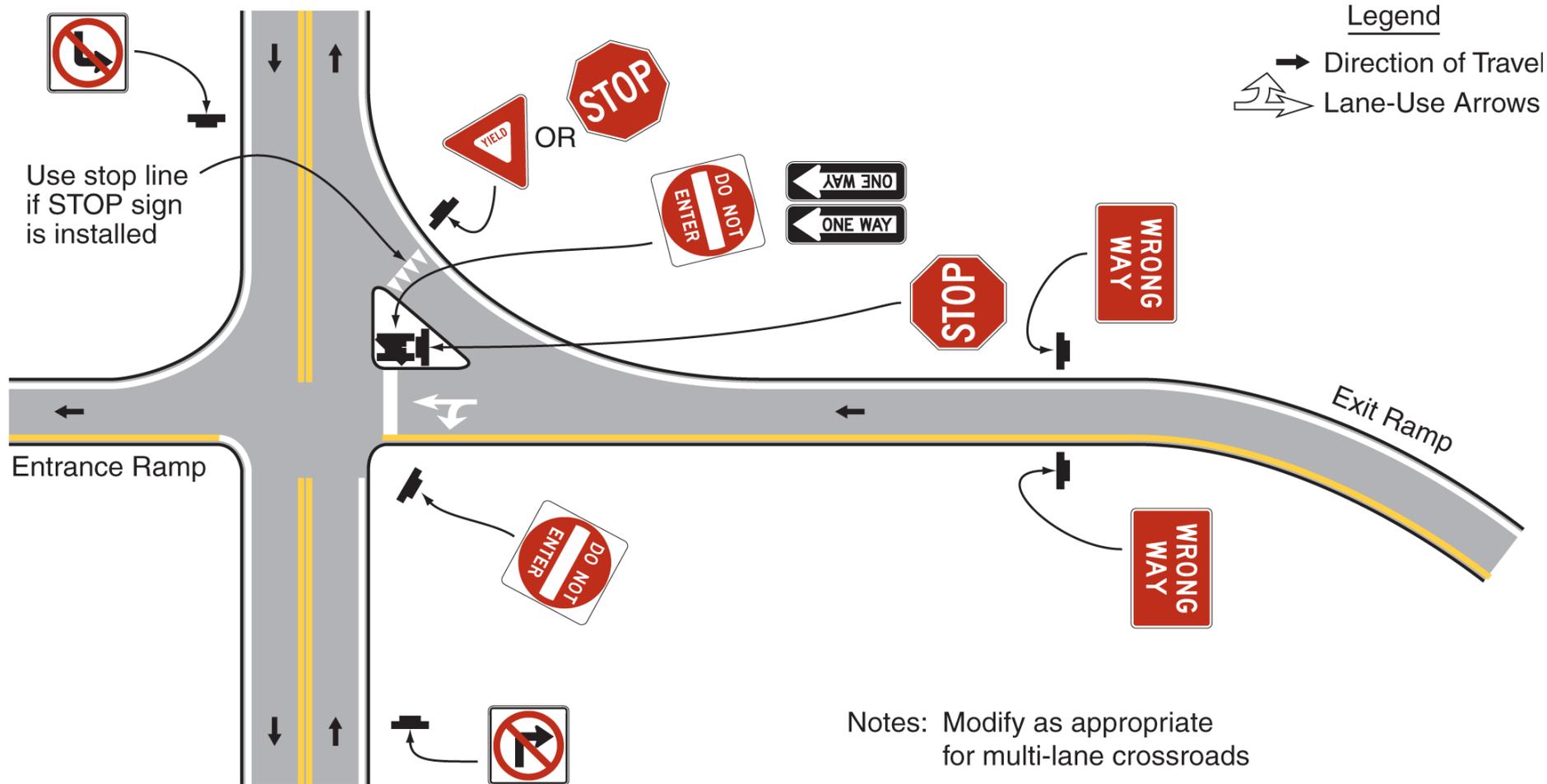


*Should have additional  
DO NOT ENTER sign  
based on DE Guidance*



**SR 1 northbound off-ramp to SR 72**

**Figure 2B-18. Example of Application of Regulatory Signing and Pavement Markings at an Exit Ramp Termination to Deter Wrong-Way Entry**  
**(Delaware Revision)**



**Standard:**

01 **On unsignalized minor-street approaches from which both left turns and right turns are permitted onto a divided highway that has a median width at the intersection itself of 30 feet or more, except as provided in Paragraph 2, a Divided Highway Crossing (R6-3 or R6-3a) sign (see Figure 2B-13) shall be used to advise road users that they are approaching an intersection with a divided highway (see Figure 2B-15).**

**Option:**

02 **If the divided highway that has a median width at the intersection itself of 30 feet or more has a traffic volume of less than 400 AADT and a speed limit of 25 mph or less, the Divided Highway Crossing signs facing the unsignalized minor-street approaches may be omitted.**

**Guidance:**

02A *(DE Revision) On unsignalized minor-street approaches from which both left turns and right turns are permitted onto a divided highway that has a median width at the intersection greater than or equal to 4 feet and less than 30 feet, a Divided Highway Crossing (R6-3 or R6-3a) sign should be used to advise road users that they are approaching an intersection with a divided highway (see Figure 2B-16, 2B-16A, 2B-17, and 2B-17A).*

04 **If a Divided Highway Crossing sign is used at a four-legged intersection, the R6-3 sign shall be used. If used at a T-intersection, the R6-3a sign shall be used.**

05 **The Divided Highway Crossing sign shall be located on the near right corner of the intersection, mounted beneath a STOP or YIELD sign or on a separate support.**



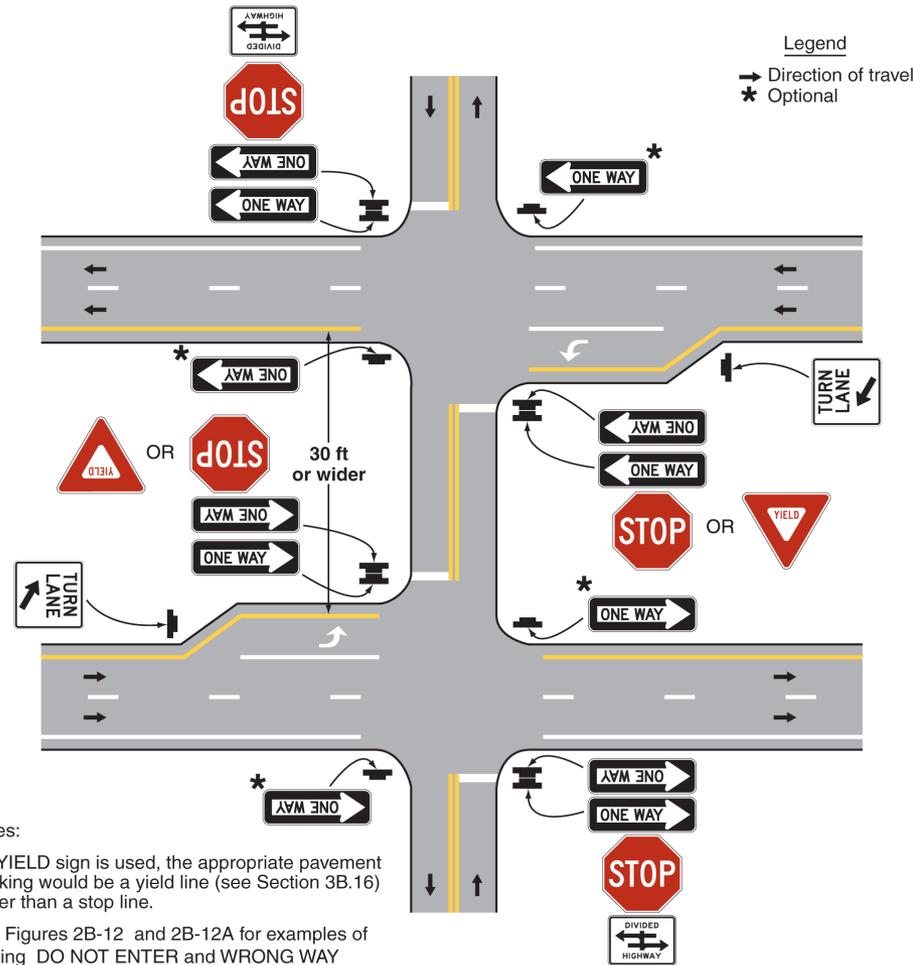
R6-3



R6-3a

- **Unsignalized intersections along divided highways with median widths  $\geq 30$  ft**
- **Located on near right corner of intersection below STOP or YIELD**
- *DE Guidance: Unsignalized intersections along divided highways with median widths  $\geq 4$  ft and  $< 30$  ft*

**Figure 2B-15. ONE WAY, TURN LANE, and Divided Highway Crossing Signing for Median Openings along Divided Highways with Median Widths of 30 Feet or Wider (Delaware Revision)**



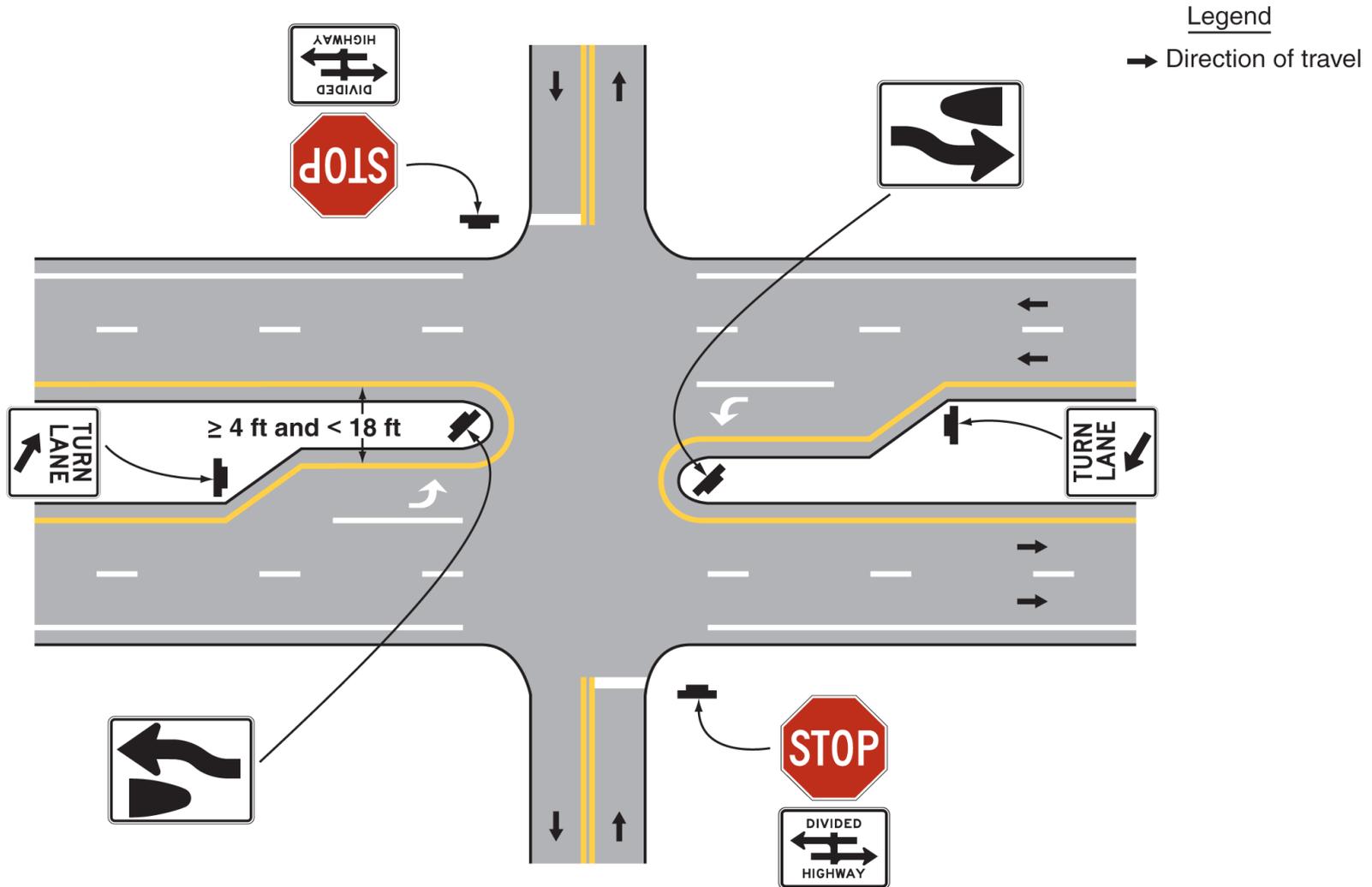
**Notes:**

If a YIELD sign is used, the appropriate pavement marking would be a yield line (see Section 3B.16) rather than a stop line.

See Figures 2B-12 and 2B-12A for examples of placing DO NOT ENTER and WRONG WAY signing.

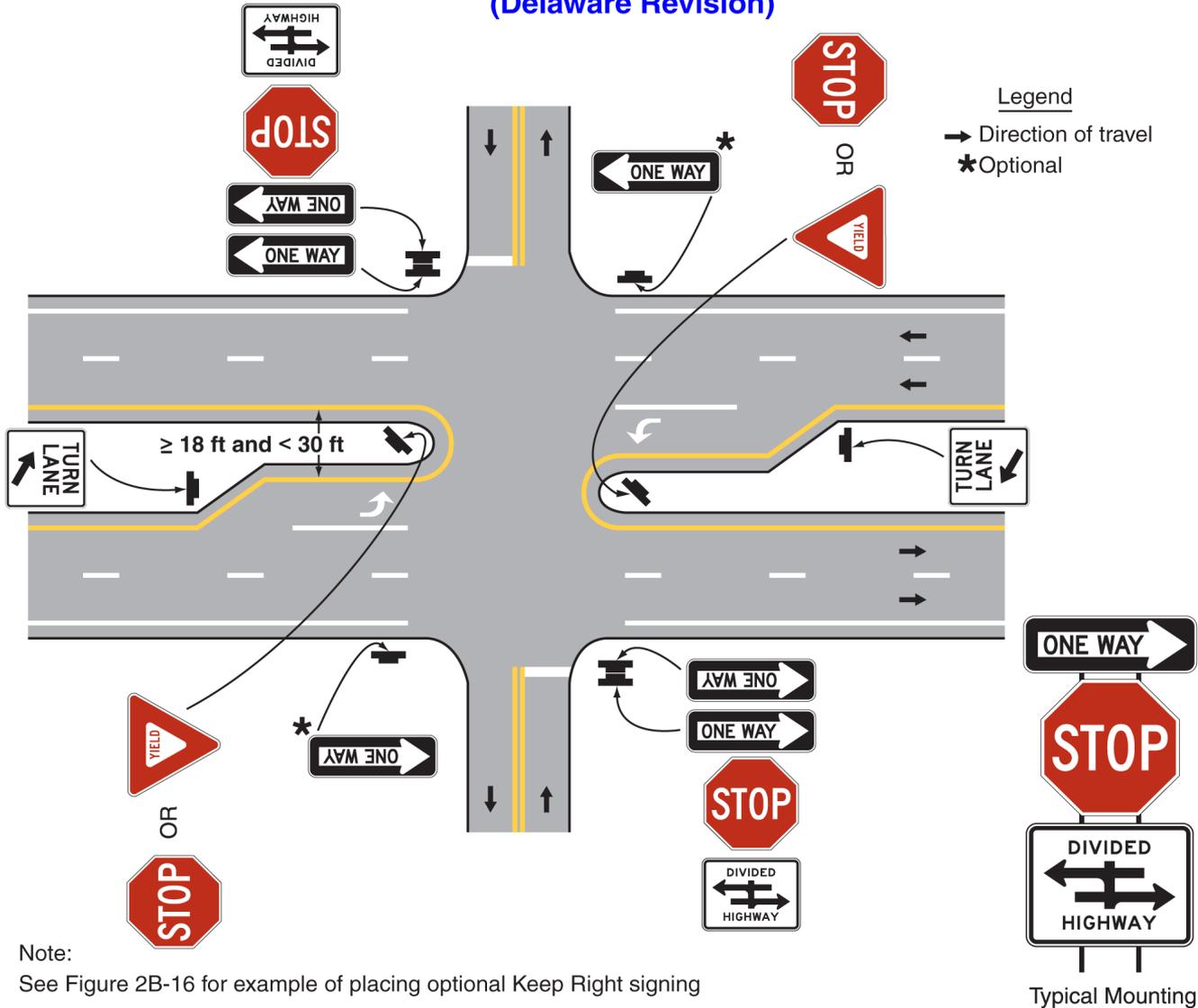
Double yellow center line should be placed in the median if the median width is greater than or equal to 50 ft. Engineering judgement should be used to determine whether a double yellow center line should be placed in the median if the median width is greater than or equal to 30 ft and less than 50 ft.

**Figure 2B-16. Keep Right, TURN LANE, and Divided Highway Crossing Signing for Median Openings along Divided Highways with Median Widths  $\geq 4$  Feet and  $< 18$  Feet (Delaware Revision)**



**Figure 2B-16A. ONE WAY, TURN LANE, and Divided Highway Crossing Signing for Median Openings along Divided Highways with Median Widths  $\geq 18$  Feet and  $< 30$  Feet**

**(Delaware Revision)**



**Guidance:**

01 *Where the central island of a roundabout allows for the installation of signs, Roundabout Directional Arrow (R6-4 series) signs (see Figure 2B-20) should be used in the central island to direct traffic counter-clockwise around the central island, except as provided in Paragraph 11 in Section 2B.40.*

**Standard:**

02 **The R6-4 sign shall be a horizontal rectangle with two black chevron symbols pointing to the right on a white background. The R6-4a sign shall be a horizontal rectangle with three black chevron symbols pointing to the right on a white background. The R6-4b sign shall be a horizontal rectangle with four black chevron symbols pointing to the right on a white background. No border shall be used on the Roundabout Directional Arrow signs.**

03 **Roundabout Directional Arrow signs shall be used only at roundabouts and other circular intersections.**

**Support:**

13 **Using ONE WAY signs on the central island of a roundabout might result in some drivers incorrectly concluding that the cross street is a one-way street. Using Roundabout Directional Arrow signs might reduce this confusion. However, using ONE WAY signs might be necessary in States that have defined a roundabout as a series of T-intersections. (From Section 2B.40)**



R6-4



R6-4a

- *Installed in central island instead of Chevron Alignments and ONE WAY*

Should now use R6-4



**West Park Dr roundabout (Blue Ball)**

**Guidance:**

01 *Where the central island of a roundabout does not provide a reasonable place to install a sign, Roundabout Circulation (R6-5P) plaques (see Figure 2B-20) should be placed below the YIELD signs on each approach.*

**Option:**

02 At roundabouts where Roundabout Directional Arrow signs and/or ONE WAY signs have been installed in the central island, Roundabout Circulation plaques may be placed below the YIELD signs on approaches to roundabouts to supplement the central island signs.

03 The Roundabout Circulation plaque may be used at any type of circular intersection.



- *Installed below YIELD where central island is too small to install Roundabout Directional Arrow*
- Optional below YIELD at locations with directional signs in central island

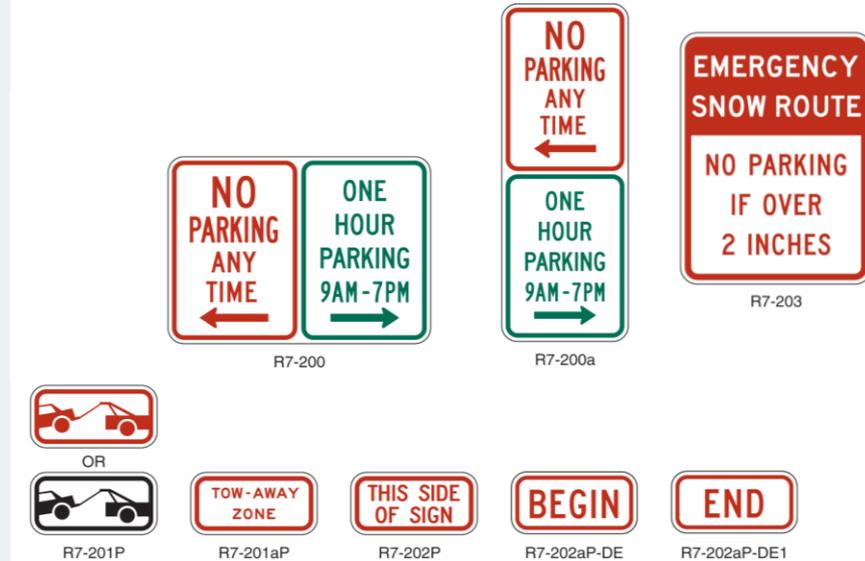




**Figure 2B-24. Parking and Standing Signs and Plaques (R7 Series) (Sheet 1 of 2)**  
(Delaware Revision)



**Figure 2B-24. Parking and Standing Signs and Plaques (R7 Series) (Sheet 2 of 2)**  
(Delaware Revision)



**Figure 2B-25. Parking and Stopping Signs and Plaques (R8 Series)**



**Standard:**

01 Traffic Signal signs applicable to pedestrian actuation (see Figure 2B-26) or bicyclist actuation (see Figure 9B-2) shall be mounted immediately above or incorporated into the pushbutton detector units (see Section 4E.08).

- Mounted immediately above or incorporated into pushbutton device
- DE Guidance: *12 common educational signs*



R10-3b



R10-3b-DE



R10-3b-DE1



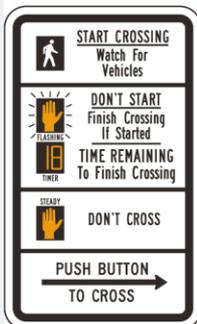
R10-3d



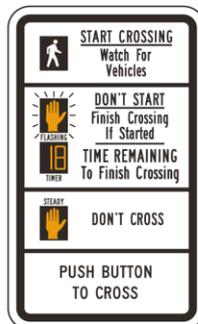
R10-3d-DE



R10-3d-DE1



R10-3e



R10-3e-DE



R10-3e-DE1



R10-3e-DE2



R10-3e-DE3



R10-3e-DE4

Non-countdown pedestrian displays

Pushbutton(s) aligned with crosswalk

Crossing to median only



R10-3b



R10-3b-DE



R10-3b-DE1



R10-3d



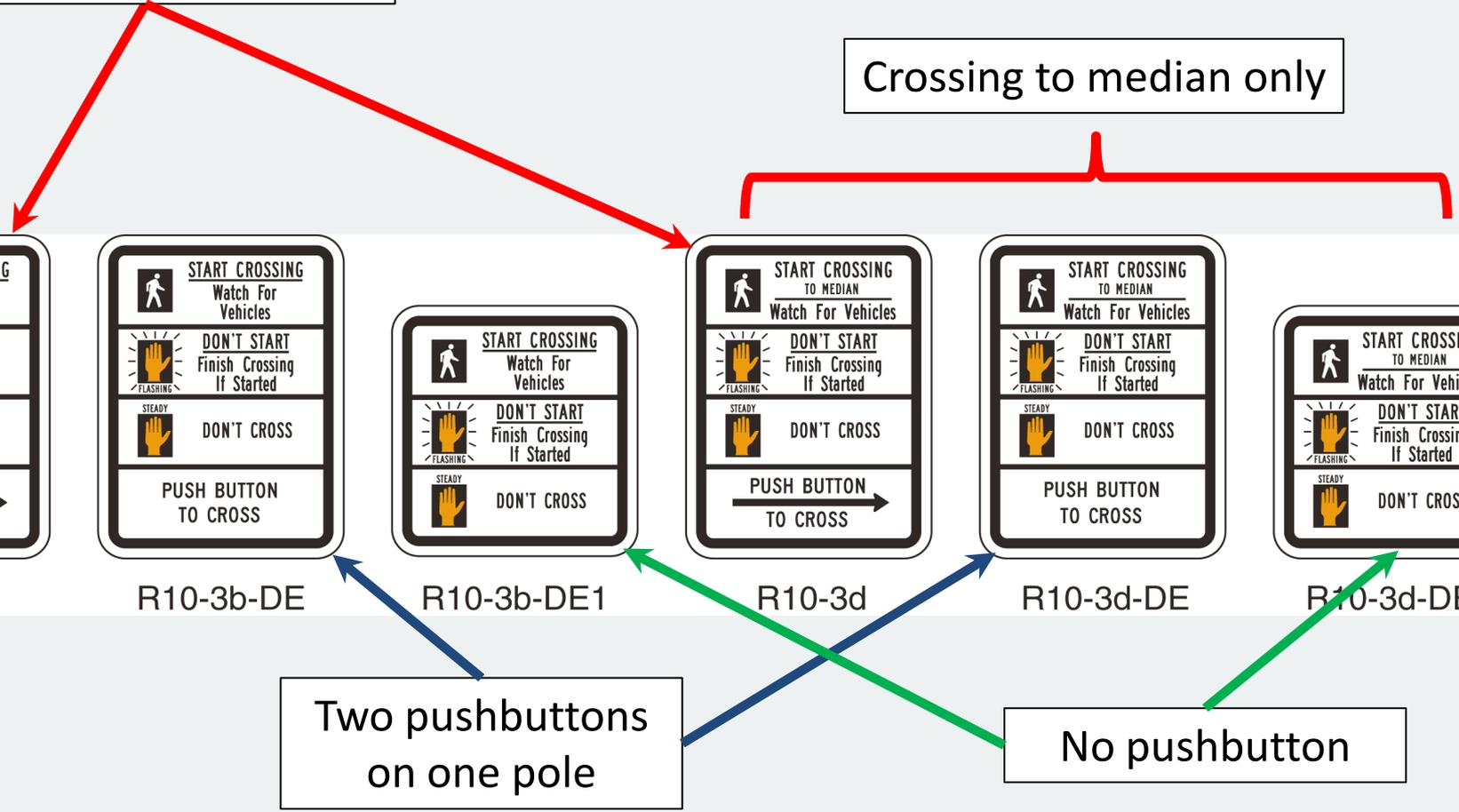
R10-3d-DE



R10-3d-DE1

Two pushbuttons on one pole

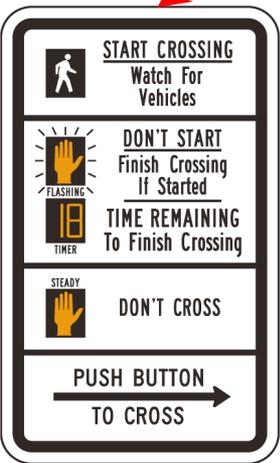
No pushbutton



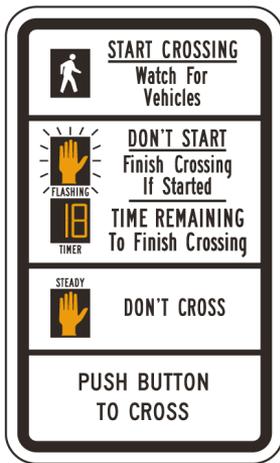
# Countdown pedestrian displays

Pushbutton(s) aligned with crosswalk

Crossing to median only



R10-3e



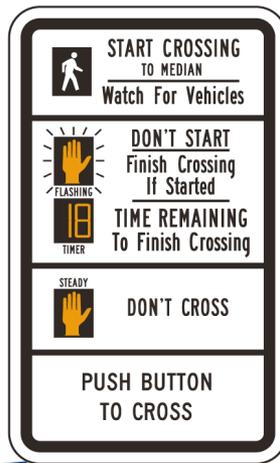
R10-3e-DE



R10-3e-DE1



R10-3e-DE2



R10-3e-DE3



R10-3e-DE4

Two pushbuttons on one pole

No pushbutton

**SR 4 (Maryland Ave) at Alban Dr**



From: Grant Jerry (LegHall)  
Sent: Friday, October 16, 2009 10:14:02 AM  
To: Luszcz Mark (DelDOT); Meyer Tom (DelDOT); Hutson Bob (DelDOT)  
Cc: Buckley Matt (DelDOT); Mitchell John L (LegHall)  
Subject: RE: Signage  
Auto forwarded by a Rule

I spoke with Mr. Strupczewski; he still thinks a larger sign should be installed (says the current one is the size of a "playing card"). It sounds like the crossing buttons are obscured by another pole.

*Face of pushbutton should be parallel to crosswalk (see Part 4); ped sign shall be mounted above pushbutton*



Arrowhead should not be covered for this type of installation

**SR 404 at E. Service Rd/Bridgeville Center Rd**

DE-specific sign omits arrows for  
ped signal poles with 2 pushbuttons



SR 92 at SR 3 / Marsh Rd

### Guidance:

03 If used, the **LEFT ON GREEN ARROW ONLY (R10-5)** sign, the **LEFT TURN YIELD ON GREEN (symbolic circular green) (R10-12)** sign, or the **LEFT TURN YIELD ON FLASHING RED ARROW AFTER STOP (R10-27)** sign should be located adjacent to the left-turn signal face.

### Option:

04 If needed for additional emphasis, an additional **LEFT TURN YIELD ON GREEN (symbolic circular green) (R10-12)** sign with an **AT SIGNAL (R10-31P)** supplemental plaque (see Figure 2B-27) may be installed in advance of the intersection.

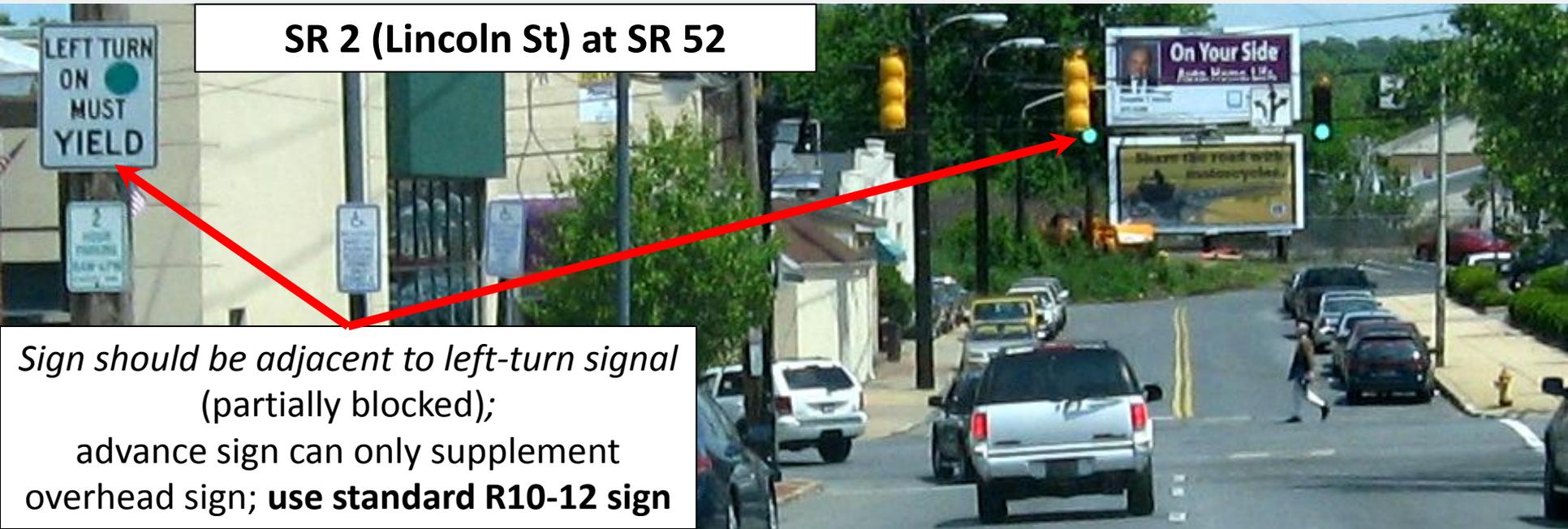


R10-12



R10-31P

- Located adjacent to the left-turn signal
- Optional (supplemental) advance sign with plaque

**SR 2 (Lincoln St) at SR 52**

Sign should be adjacent to left-turn signal (partially blocked);  
advance sign can only supplement overhead sign; **use standard R10-12 sign**

07 The EMERGENCY SIGNAL (R10-13) sign (see Figure 2B-27) shall be used in conjunction with emergency-vehicle traffic control signals (see Section 4G.02).

- **Installed adjacent to the signal heads at all emergency-vehicle (fire) signals**



**R10-13 sign installed adjacent to the emergency-vehicle signal heads**

**Aetna Fire Station along Old County Rd**

**Standard:**

(From Section 4F.02)

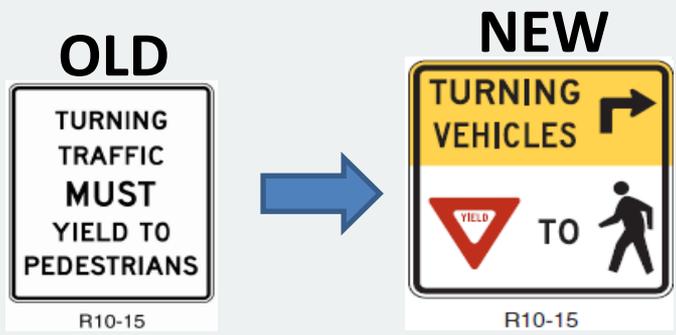
08 A **CROSSWALK STOP ON RED** (symbolic circular red) (R10-23) sign (see Section 2B.53) shall be mounted adjacent to a pedestrian hybrid beacon face on each major street approach. If an overhead pedestrian hybrid beacon face is provided, the sign shall be mounted adjacent to the overhead signal face.



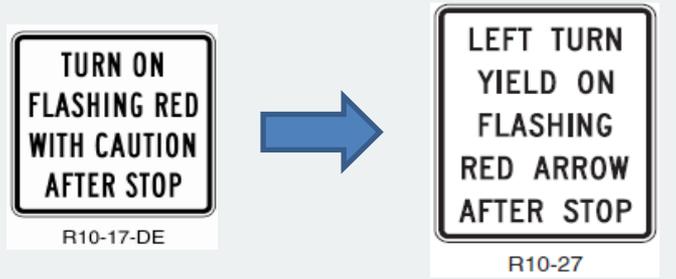
- **Installed adjacent to all pedestrian hybrid (“HAWK”) beacons**



# • Modifications to two common signs



- Used where motorists need to be reminded to yield to pedestrians



- Used with DE's flashing red arrow signal phasing
- *Should be installed overhead adjacent to left-turn signal heads*

10 A U-TURN YIELD TO RIGHT TURN (R10-16) sign (see Figure 2B-27) may be installed near the left-turn signal face if U-turns are allowed on a protected left-turn movement on an approach from which a right-turn GREEN ARROW signal indication is simultaneously being displayed to drivers making a right turn from the conflicting approach to their left.

- New sign for right-turn overlap signal phasing



## Standard:

01 Where a right turn on red (or a left turn on red from a one-way street to a one-way street) is to be prohibited, a symbolic NO TURN ON RED (symbolic circular red) (R10-11) sign (see Figure 2B-27) or a NO TURN ON RED (R10-11a, R10-11b) word message sign (see Figure 2B-27) shall be used.

## Guidance:

02 If used, the No Turn on Red sign should be installed near the appropriate signal head.

## Option:

06 On signalized approaches with more than one right-turn lane, a NO TURN ON RED EXCEPT FROM RIGHT LANE (R10-11c) sign (see Figure 2B-27) may be post-mounted at the intersection or a NO TURN ON RED FROM THIS LANE (with down arrow) (R10-11d) sign (see Figure 2B-27) may be mounted directly over the center of the lane from which turns on red are prohibited.

08 A RIGHT TURN ON RED MUST YIELD TO U-TURN (R10-30) sign (see Figure 2B-27) may be installed to remind road users that they must yield to conflicting U-turn traffic on the street or highway onto which they are turning right on a red signal after stopping.

08A (DE Revision) A NO TURN ON RED (Arrow) (R10-11-DE) sign (see Figure 2B-27) may be installed to remind road users that they are not permitted to turn right when facing a RED ARROW signal indication.

- **Installed where rights on red are prohibited**
- *Located adjacent to the appropriate signal head*
- Option to remind motorists to yield to U-turns
- Optional signs for double rights
- DE Option: R10-11-DE educational sign commonly used with "T" signal heads



**BEFORE**



*Sign should be adjacent to appropriate signal head*

**AFTER**



**Adams St at 11<sup>th</sup> St / I-95 southbound off-ramp**

**Option:**

03A (DE Revision) A Traffic Signal Photo Enforced (R10-18a) sign (see Figure 2B-3) may be installed on an approach to a signalized location where red-light cameras are present on the approach to the signalized location.

**Standard:**

03C (DE Revision) If used, the Traffic Signal Photo Enforced sign shall be individually installed on a separate post or mounting.

**Option:**

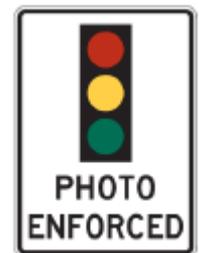
03F (DE Revision) On one-way streets or where a median of sufficient width is present, an additional Traffic Signal Photo Enforced sign may be placed on the left-hand side of the roadway in accordance with Paragraph 11 of Section 2A.16.

- DE Option: Installed where red-light cameras are present on the approach
- DE Option: Installed in median along divided highways with medians of sufficient width

**OLD**



**NEW**



R10-18a



Can be posted on both sides of an approach; **use new standard R10-18a sign**

**SR 896 at SR 4**

### Guidance:

- 01 *The ROAD CLOSED (R11-2) sign should be installed where roads have been closed to all traffic (except authorized vehicles).*
- 02 *ROAD CLOSED—LOCAL TRAFFIC ONLY (R11-3) or ROAD CLOSED TO THRU TRAFFIC (R11-4) signs should be used where through traffic is not permitted, or for a closure some distance beyond the sign, but where the highway is open for local traffic up to the point of closure.*

### Standard:

- 03 **The Road Closed (R11-2, R11-3 series, and R11-4) signs (see Figure 2B-29) shall be designed as horizontal rectangles. These signs shall be preceded by the applicable Advance Road Closed warning sign with the secondary legend AHEAD and, if applicable, an Advance Detour warning sign (see Section 6F.19).**

### Option:

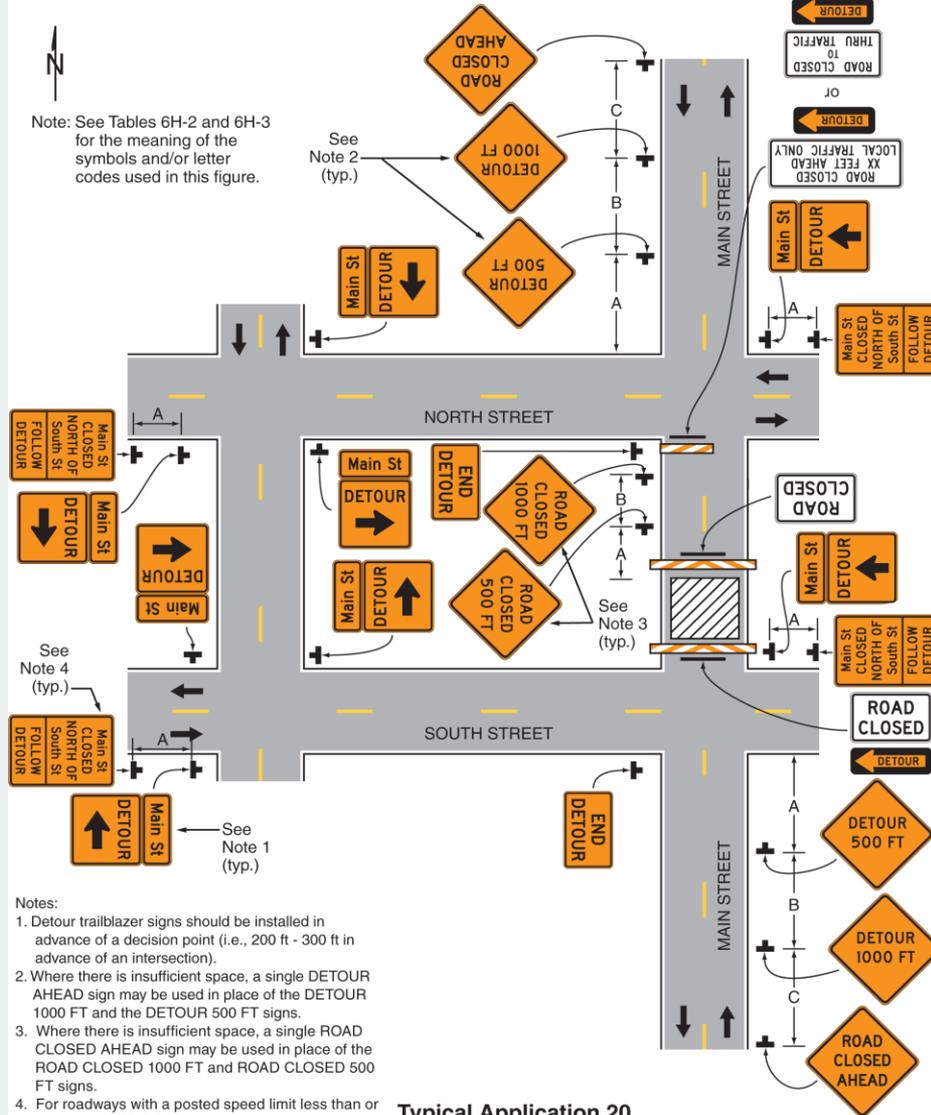
- 04 **An intersecting street name or a well-known destination may be substituted for the XX MILES AHEAD legend in urban areas.**
- 05 **The word message BRIDGE OUT may be substituted for the ROAD CLOSED legend where applicable.**

- **Advance Road Closed or Advance Detour warning signs required upstream of closure**
- **Street name or destination can be used in place of XX MILES AHEAD**



**US 13 at SR 404 realignment**

Figure 6H-20. Detour for a Closed Street (TA-20)  
(Delaware Revision)



Typical Application 20

**Option:**

01 Barricades may be used to mark any of the following conditions:

- A. A roadway ends,
- B. A ramp or lane closed for operational purposes, or
- C. The permanent or semi-permanent closure or termination of a roadway.

**Standard:**

02 When used to warn and alert road users of the terminus of a roadway in other than temporary traffic control zones, barricades shall meet the design criteria of Section 6F.68 for a Type 3 Barricade, except that the colors of the stripes shall be retroreflective white and retroreflective red.

**Option:**

03 An end-of-roadway marker or markers may be used as described in Section 2C.66.

**Guidance:**

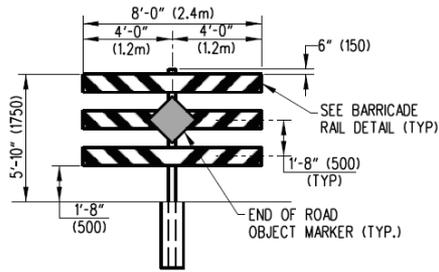
04 *Appropriate advance warning signs (see Chapter 2C) should be used.*

- **Permanent barricades shall meet criteria for Type 3 Barricades in Part 6**
- **Alternating retroreflective red and white stripes on all rails**
- **Standard construction detail T-16: Type 4 end-of-roadway object markers installed on middle rail**

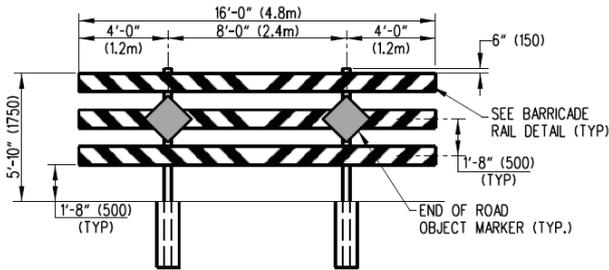


**US 13 at Hickory Ridge Rd**

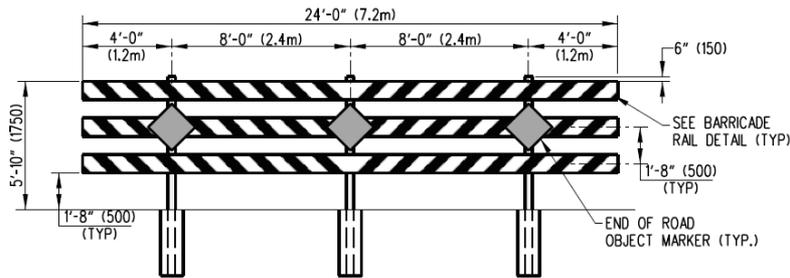
SCALE : N.T.S.



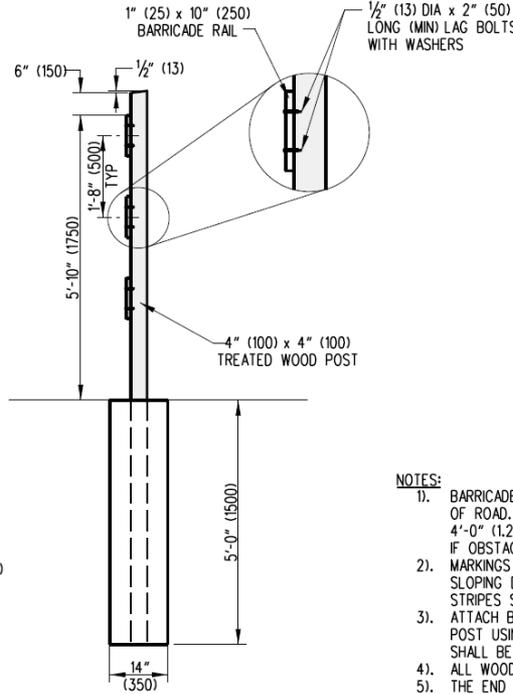
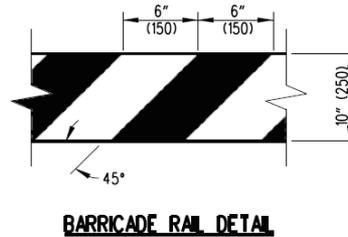
**1-POST PERMANENT WOOD BARRICADE DETAIL**



**2-POST PERMANENT WOOD BARRICADE DETAIL**



**3-POST PERMANENT WOOD BARRICADE DETAIL**



**BARRICADE POST DETAIL**

WOOD BARRICADE POST CHART			
ROADWAY WIDTH	NUMBER OF BARRICADES	TYPE OF POST	OUTSIDE OVERHANG
4'-0" (1.2m)	1	1-POST	2'-0" (600)
6'-0" (1.8m)	1	1-POST	3'-0" (900)
8'-0" (2.4m)	1	1-POST	4'-0" (1,200)
10'-0" (3m)	1	2-POST	1'-0" (300)
12'-0" (3.6m)	1	2-POST	2'-0" (600)
14'-0" (4.2m)	1	2-POST	3'-0" (900)
16'-0" (4.8m)	1	2-POST	4'-0" (1,200)
18'-0" (5.4m)	1	3-POST	1'-0" (300)
20'-0" (6m)	1	3-POST	2'-0" (600)
22'-0" (6.6m)	1	3-POST	3'-0" (900)
24'-0" (7.2m)	1	3-POST	4'-0" (1,200)
26'-0" (7.8m)	2	2-POST	1'-0" (300)
28'-0" (8.4m)	2	2-POST	2'-0" (600)
30'-0" (9m)	2	2-POST	3'-0" (900)
32'-0" (9.6m)	2	2-POST	4'-0" (1,200)
34'-0" (10.2m)	2	2-POST 3-POST	1'-0" (300)
36'-0" (10.8m)	2	2-POST 3-POST	2'-0" (600)
38'-0" (11.4m)	2	2-POST 3-POST	3'-0" (900)
40'-0" (12m)	2	2-POST 3-POST	4'-0" (1,200)
42'-0" (12.6m)	2	3-POST	1'-0" (300)
44'-0" (13.2m)	2	3-POST	2'-0" (600)
46'-0" (13.8m)	2	3-POST	3'-0" (900)
48'-0" (14.4m)	2	3-POST	4'-0" (1,200)
50'-0" (15m)	3	(2) 2-POST <ENDS> (1) 3-POST <CENTER>	1'-0" (300)

**NOTES:**

- BARRICADES SHALL BE PLACED COMPLETELY ACROSS THE ROADWAY FROM EDGE OF ROAD TO EDGE OF ROAD. IF NECESSARY, THE BARRICADE OVERHANG BEYOND THE OUTSIDE POSTS (TYPICALLY 4'-0" (1.2m)) MAY BE REDUCED TO THE "OUTSIDE OVERHANG" VALUE INDICATED IN THE TABLE ABOVE IF OBSTACLES ARE PRESENT BEYOND THE ROADWAY EDGE.
- MARKINGS FOR BARRICADE RAILS SHALL BE ALTERNATING FLUORESCENT RED AND WHITE STRIPES, SLOPING DOWNWARD AT AN ANGLE OF 45 DEGREES, USING PRISMATIC, RETROREFLECTIVE SHEETING. STRIPES SHALL SLOPE DOWNWARD TOWARDS THE CENTER OF THE CLOSURE.
- ATTACH BARRICADE RAIL AND OBJECT MARKER TO THE 4" (100) x 4" (100) PRESSURE TREATED WOOD POST USING LAG BOLTS (2" (50) LONG, MINIMUM) WITH WASHERS. TWO BOLTS PER RAIL PER POST SHALL BE REQUIRED.
- ALL WOOD SHALL BE PRESSURE TREATED.
- THE END OF ROAD OBJECT MARKER (MUTCD CODE OM4-3) SHALL BE 18" (450) x 18" (450) WITH RED PRISMATIC, RETROREFLECTIVE SHEETING.
- TREATED WOOD POST SHALL BE PLACED IN PRE-DUG HOLE, BACKFILLED USING SUITABLE MATERIAL, AND TAMPERED THOROUGHLY TO PROVIDE A RIGID SUB-SURFACE CONDITION AROUND THE POST.
- BARRICADE RAILS MAY BE CONSTRUCTED USING PLASTIC OR WOOD AND SHOULD NOT BE METAL.
- LONGER WIDTH CLOSERS CAN BE ACCOMMODATED BY VARIOUS COMBINATIONS OF 2-POST AND 3-POST BARRICADES.

**Standard:**

05 Except as provided in Paragraph 6, gate arms, if used, shall be fully retroreflectorized on both sides, have vertical stripes alternately red and white at 16-inch intervals measured horizontally as shown in Figure 8C-1.

**Standard:**

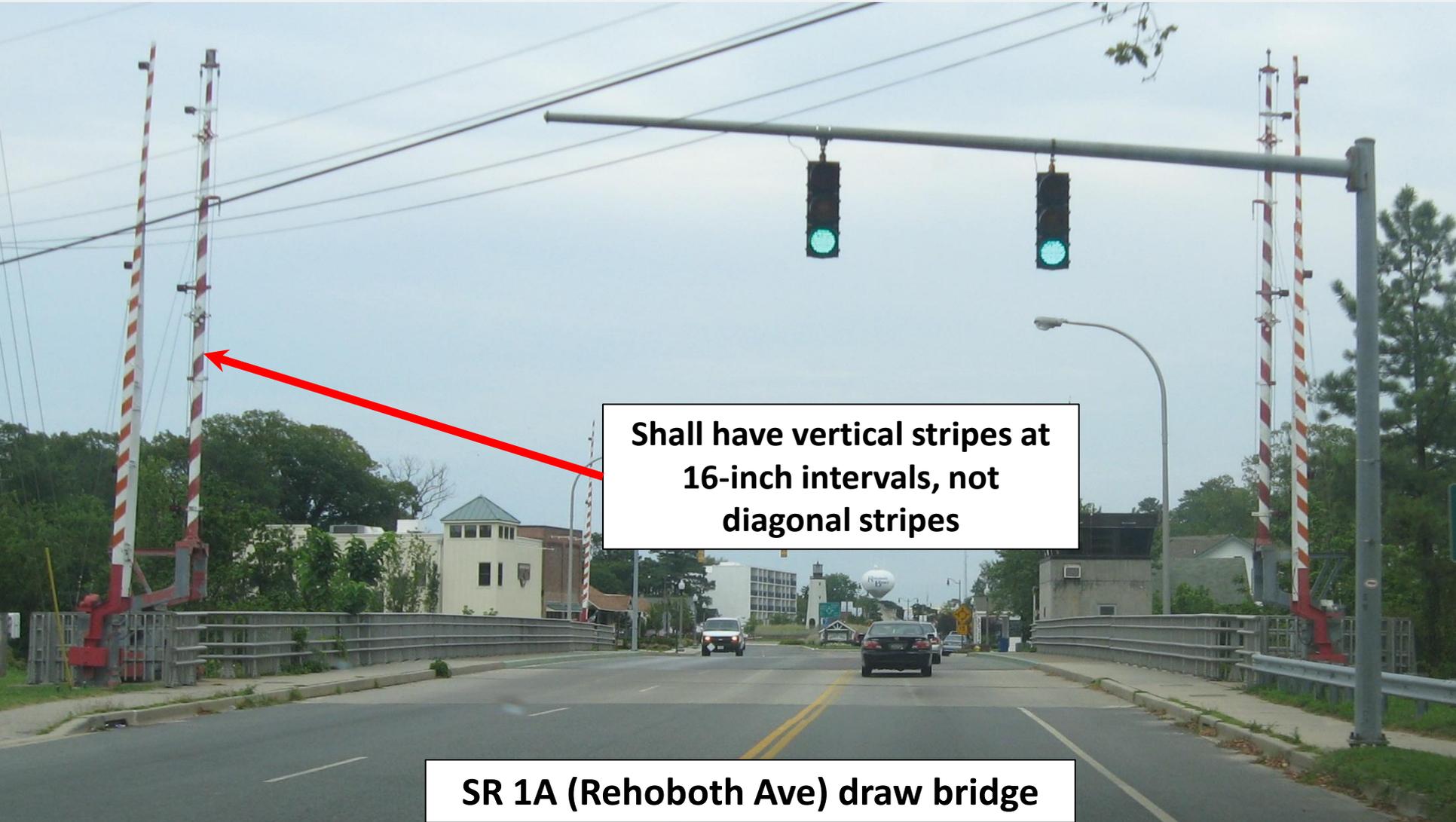
08 The gate arm shall extend across the approaching lane or lanes of traffic to effectively block motor vehicle and/or pedestrian travel as appropriate.

09 When gate arms are in the vertical position or rotated to an open position, the closest part of the gate arm and support shall have a lateral offset of at least 2 feet from the face of the curb or the edge of the traveled way.

10 When gate arms that are located in the median or on an island are in the horizontal position or rotated to a closed position, the closest part of the counterweight or its supports shall have a lateral offset of at least 2 feet from the face of the curb or the edge of the traveled way of the open roadway on the opposite side of the median or island.

15 Except as provided in Paragraph 16, rolling sections of fence, if used, shall include either a horizontal strip of retroreflectorized sheeting on both sides of the fence with vertical stripes alternately red and white at 16-inch intervals measured horizontally to simulate the appearance of a gate arm in the horizontal position, or one or more Type 4 object markers (see Section 2C.66), or both. If a horizontal strip of retroreflectorized sheeting is used, the bottom of the sheeting shall be located 3.5 to 4.5 feet above the roadway surface.

- New section for gates at movable bridges, grade crossings, access gates, etc.
- **Alternating 16" vertical red and white stripes**
- **2-ft min. lateral offset**
- **Object marker or striped sheeting on rolling fences (access gates)**



**Shall have vertical stripes at  
16-inch intervals, not  
diagonal stripes**

**SR 1A (Rehoboth Ave) draw bridge**

**Shall have Type 4 object markers or retroreflective striped sheeting**



**SR 1 emergency access gate**

**Standard:**

01 **(DE Revision)** Except as provided in Paragraph 2 or unless specifically designated otherwise, all warning signs shall be diamond-shaped (square with one diagonal vertical) with a black legend and border on a yellow background. Warning signs shall be designed in accordance with the sizes, shapes, colors, and legends contained in the “Standard Highway Signs and Markings” book (see Section 1A.11) **and/or in the Delaware Standard Signs book.**

*Guidance:*

01A **(DE Revision)** *A fluorescent yellow background should be used for overhead warning signs.*

**Option:**

02 A warning sign that is larger than the size shown in the Oversized column in Table 2C-2 for that particular sign may be diamond-shaped or may be rectangular or square in shape.

04 Word message warning signs other than those provided in this Manual may be developed and installed by State and local highway agencies.



W3-5-DE

- **Black-on-yellow diamond warning signs, unless otherwise specified (e.g., plaques)**
- Signs larger than Oversized size can be rectangular or square
- Custom word messages for special circumstances
- DE Guidance: *Fluorescent yellow sheeting should be used for overhead warning signs*

NOTICE header typically reserved for regulatory signs

**Custom warning message shall be black-on-yellow; rectangular because it exceeds Oversized size**

**I-495 southbound south of DE-PA state line**



05 Warning signs regarding conditions associated with pedestrians, bicyclists, and playgrounds may have a black legend and border on a yellow or fluorescent yellow-green background.

Standard:

06 Warning signs regarding conditions associated with school buses and schools and their related supplemental plaques shall have a black legend and border on a fluorescent yellow-green background (see Section 7B.07).



S3-1

- **Fluorescent yellow-green (FYG) background for all school signs**
- FYG can be used for ped and bike signs; however, in DE, generally reserved for in-street ped signs and ped signs in beach area



Church St (Rehoboth) approaching SR 1



All school signs now FYG; new symbolic S3-1 in Part 7; discontinue use of supplemental plaque

**Standard:**

- 01 Except as provided in Section 2A.11, the sizes for warning signs shall be as shown in Table 2C-2.
- 03 Except as provided in Paragraph 5, the minimum size for all diamond-shaped warning signs facing traffic on a multi-lane conventional road where the posted speed limit is higher than 35 mph shall be 36 x 36 inches.

**Option:**

- 05 If a diamond-shaped warning sign is placed on the left-hand side of a multi-lane roadway to supplement the installation of the same warning sign on the right-hand side of the roadway, the minimum size identified in the Single Lane column in Table 2C-2 may be used.

**Table 2C-2. Warning Sign and Plaque Sizes (Sheet 1 of 4)**  
**(DE Revision)**

Sign or Plaque	Sign Designation	Section	Conventional Road		Expressway	Freeway	Minimum	Oversized
			Single Lane	Multi-Lane				
Horizontal Alignment	W1-1,2,3,4,5	2C.07	30 x 30*	36 x 36	36 x 36	36 x 36	—	48 x 48
Combination Horizontal Alignment/Advisory Speed	W1-1a,2a	2C.10	36 x 36	36 x 36	48 x 48	48 x 48	—	48 x 48
One-Direction Large Arrow	W1-6	2C.12	48 x 24	48 x 24	60 x 30	60 x 30	—	60 x 30
Two-Direction Large Arrow	W1-7	2C.47	48 x 24	48 x 24	—	—	—	60 x 30
Chevron Alignment	W1-8	2C.09	18 x 24	18 x 24	30 x 36	36 x 48	—	24 x 30

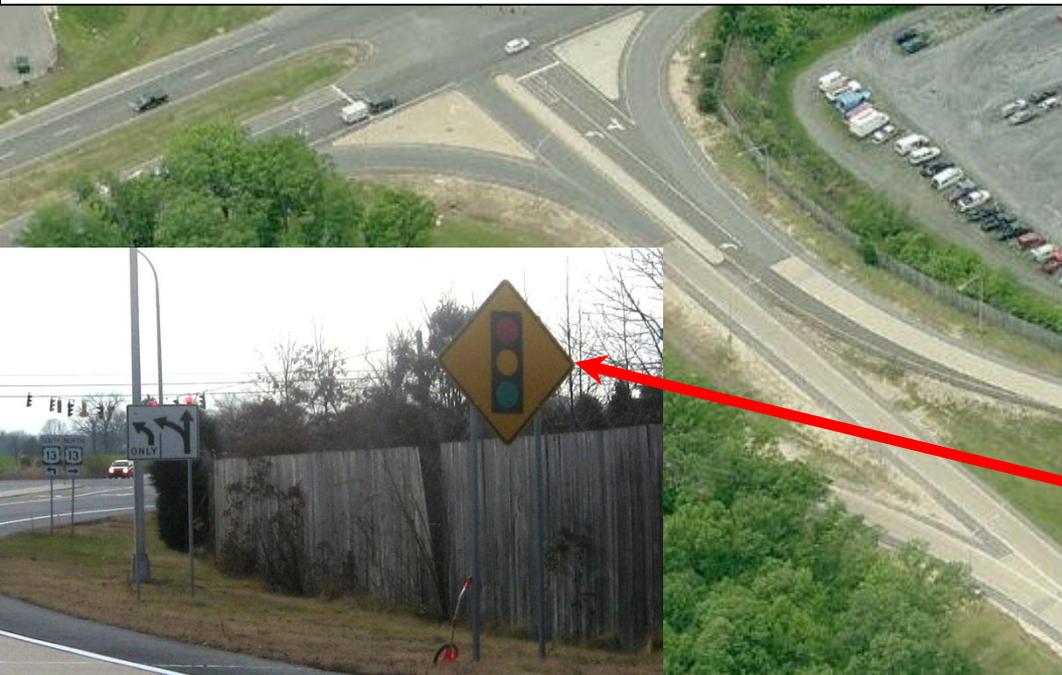
- **Sizes shall follow Table 2C-2**
- **Larger sizes for multi-lane roads with a posted speed limit > 35 MPH**
- Single Lane sizes can be used if same sign is posted on left-hand and right-hand side

**Guidance:**

07 *The minimum size for all diamond-shaped warning signs facing traffic on exit and entrance ramps should be the size identified in Table 2C-2 for the mainline roadway classification (Expressway or Freeway). If a minimum size is not provided in the Freeway Column, the Expressway size should be used. If a minimum size is not provided in the Freeway or the Expressway Column, the Oversized size should be used.*

- *On-ramp and off-ramp sign sizes should correspond to mainline roadway classification*

**SR 1 southbound off-ramp to US 13  
(Exit 119 B, North Smyrna)**



*Off-ramp sign sizes correspond to mainline, e.g.,  
36" x 36" (min.) W1-2  
48" x 48" (min.) W3-3*



**Guidance:**  
03 *Warning signs should be placed so that they provide an adequate PRT. The distances contained in Table 2C-4 are for guidance purposes and should be applied with engineering judgment. Warning signs should not be placed too far in advance of the condition, such that drivers might tend to forget the warning because of other driving distractions, especially in urban areas.*

- Advance placement based on Table 2C-4, which has new values

Condition B to 0 MPH: Stop and yield conditions

**Table 2C-4. Guidelines for Advance Placement of Warning Signs**

Posted or 85th-Percentile Speed	Advance Placement Distance <sup>1</sup>								
	Condition A: Speed reduction and lane changing in heavy traffic <sup>2</sup>	Condition B: Deceleration to the listed advisory speed (mph) for the condition							
		0 <sup>3</sup>	10 <sup>4</sup>	20 <sup>4</sup>	30 <sup>4</sup>	40 <sup>4</sup>	50 <sup>4</sup>	60 <sup>4</sup>	70 <sup>4</sup>
20 mph	225 ft	100 ft <sup>6</sup>	N/A <sup>5</sup>	—	—	—	—	—	—
25 mph	325 ft	100 ft <sup>6</sup>	N/A <sup>5</sup>	N/A <sup>5</sup>	—	—	—	—	—
30 mph	460 ft	100 ft <sup>6</sup>	N/A <sup>5</sup>	N/A <sup>5</sup>	—	—	—	—	—
35 mph	565 ft	100 ft <sup>6</sup>	N/A <sup>5</sup>	N/A <sup>5</sup>	N/A <sup>5</sup>	—	—	—	—
40 mph	670 ft	125 ft	100 ft <sup>6</sup>	100 ft <sup>6</sup>	N/A <sup>5</sup>	—	—	—	—
		125 ft	100 ft <sup>6</sup>	100 ft <sup>6</sup>	N/A <sup>5</sup>	—	—	—	—
		200 ft	175 ft	125 ft	100 ft <sup>6</sup>	—	—	—	—
		275 ft	225 ft	200 ft	125 ft	N/A <sup>5</sup>	—	—	—
		350 ft	325 ft	275 ft	200 ft	100 ft <sup>6</sup>	—	—	—
65 mph	1,200 ft	475 ft	450 ft	400 ft	350 ft	275 ft	200 ft	100 ft <sup>6</sup>	—
70 mph	1,250 ft	550 ft	525 ft	500 ft	450 ft	375 ft	275 ft	150 ft	—
75 mph	1,350 ft	650 ft	625 ft	600 ft	550 ft	475 ft	375 ft	250 ft	100 ft <sup>6</sup>

Condition A: Speed reduction and lane changing in heavy traffic

Condition B to XX MPH: Speed reduction in advance of hazard (e.g., curve)

**Guidance:**

04 *(DE Revision) Minimum spacing between warning signs with different messages should be based on the estimated PRT for driver comprehension of and reaction to the second sign. The minimum warning sign spacing contained in Table 2C-4A should be applied with engineering judgment.*

05 *The effectiveness of the placement of warning signs should be periodically evaluated under both day and night conditions.*

**Option:**

06 *Warning signs that advise road users about conditions that are not related to a specific location, such as Deer Crossing or SOFT SHOULDER, may be installed in an appropriate location, based on engineering judgment, since they are not covered in Table 2C-4.*

- DE Guidance: *Table 2C-4A for minimum spacing between warning signs*
- Appropriate to install some signs adjacent to hazard (e.g., Pedestrian warning sign adjacent to crossing)

**Table 2C-4A. Guidelines for Minimum Spacing between Warning Signs (DE Revision)**

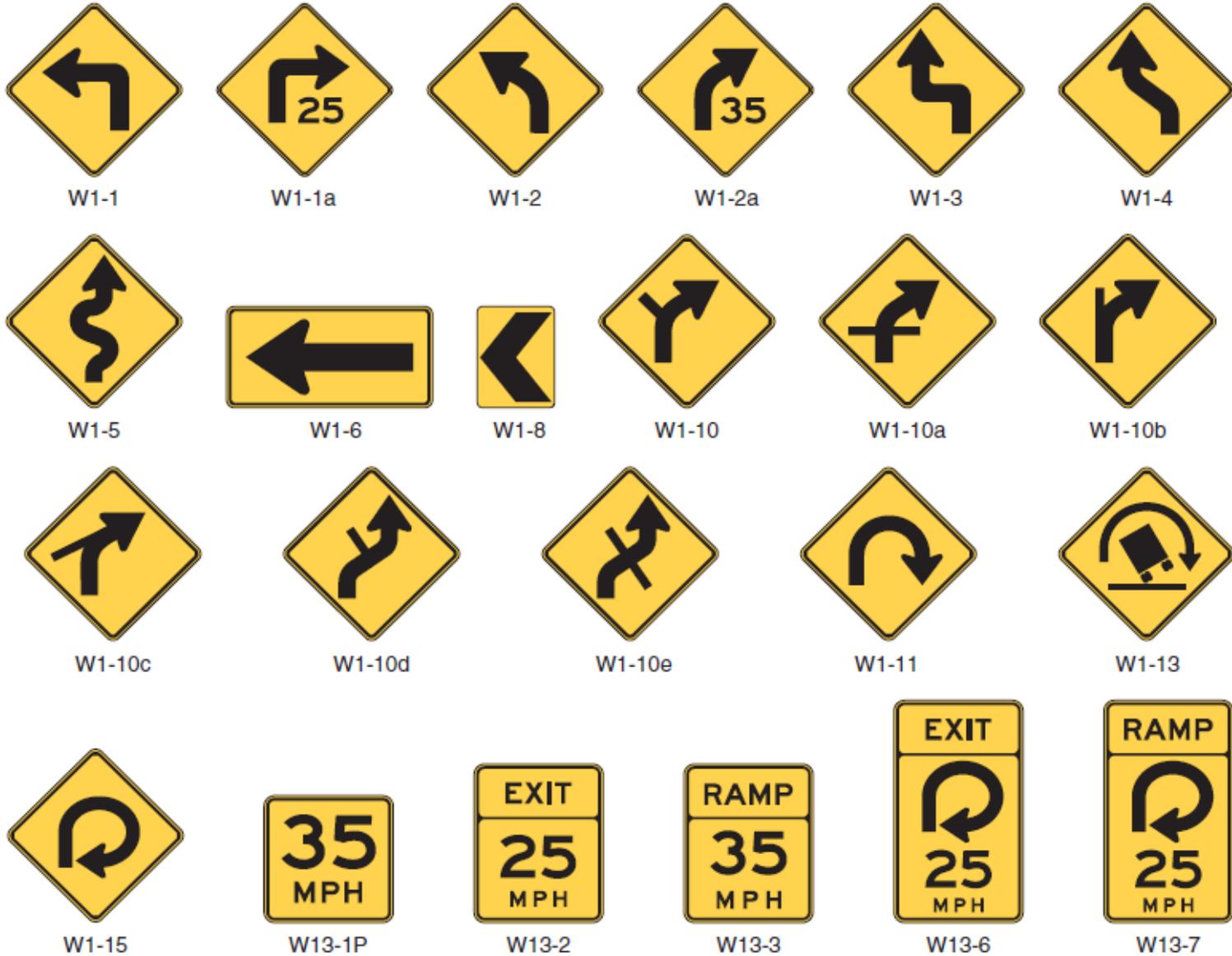
Posted or 85 <sup>th</sup> Percentile Speed	Minimum Spacing	Posted or 85 <sup>th</sup> Percentile Speed	Minimum Spacing
20 mph	100 ft	45 mph	300 ft
25 mph	100 ft	50 mph	400 ft
30 mph	100 ft	55 mph	500 ft
35 mph	150 ft	60 mph	600 ft
40 mph	200 ft	65 mph	700 ft

*Warning signs should be far enough apart for motorists to comprehend and react to each condition*



**I-95 southbound off-ramp to SR 273**

**Figure 2C-1. Horizontal Alignment Signs and Plaques**



### Standard:

02 (DE Revision) In advance of horizontal curves on freeways, on expressways, and on roadways with more than 1,000 AADT that are functionally classified as arterials or collectors, horizontal alignment warning signs shall be used in accordance with Table 2C-5 based on the speed differential between the roadway's posted or statutory speed limit or 85<sup>th</sup>-percentile speed on the **tangent** approach to the curve and the horizontal curve's advisory speed.

### Option:

02B (DE Revision) Where an advisory speed determined in accordance with Section 2C.08 equals or exceeds the posted or statutory speed limit, horizontal alignment warning signs, excluding Advisory Speed plaques, may be installed based upon engineering judgment.

03 Horizontal Alignment Warning signs may also be used on other roadways or on arterial and collector roadways with less than 1,000 AADT based on engineering judgment.

- **Requirements for freeways, expressways, and arterials and collectors with > 1,000 AADT based on Table 2C-5**
- Can be used on other roads regardless of AADT or classification
- DE Option: Can be installed where advisory speed exceeds speed limit (excluding Advisory Speed plaques)

**Guidance:**

02A (DE Revision) *The provisions of Table 2C-5 that recommend or require the use of certain signs or plaques should be applied only where the advisory speed for the curve is less than the posted or statutory speed limit on the tangent approach to the curve.*

**Support:**

03A (DE Revision) FHWA's Interpretation Letter 2(09)-2 (I) - Determination of Speed Differential for Curve Warning Signs and Plaques clarifies data collection requirements recognizing that it is unrealistic to collect data in advance of every curve where Table 2C-5 is applied.

- DE Guidance: *Table 2C-5 applies where advisory speed < posted or statutory speed limit*
- DE Support: Data collection and formal studies not required at all curves

**Table 2C-5. Horizontal Alignment Sign Selection  
(DE Revision)**

Type of Horizontal Alignment Sign	Difference Between Approach Speed and Curve Advisory Speed*				
	5 mph	10 mph	15 mph	20 mph	25 mph or more
Turn (W1-1), Curve (W1-2), Reverse Turn (W1-3), Reverse Curve (W1-4), Winding Road (W1-5), and Combination Horizontal Alignment/Intersection (W1-10 series) (see Section 2C.07 to determine which sign to use)	Recommended	Required	Required	Required	Required
Advisory Speed Plaque (W13-1P)	Recommended	Required	Required	Required	Required
Chevrons (W1-8) and/or One Direction Large Arrow (W1-6)	Optional	Recommended	Required	Required	Required
Exit Speed (W13-2) and Ramp Speed (W13-3) on exit ramp	Optional	Optional	Recommended	Required	Required

\* Difference Between Approach Speed and Curve Advisory Speed is defined as the difference in speed between the posted or statutory speed limit or 85<sup>th</sup>-percentile speed on the tangent approach to the curve and the advisory speed for the curve.

**Standard:**

01 If Table 2C-5 indicates that a horizontal alignment sign (see Figure 2C-1) is required, recommended, or allowed, the sign installed in advance of the curve shall be a Curve (W1-2) sign unless a different sign is recommended or allowed by the provisions of this Section.

02 A Turn (W1-1) sign shall be used instead of a Curve sign in advance of curves that have advisory speeds of 30 mph or less (see Figure 2C-2).

*Guidance:*

03 Where there are two changes in roadway alignment in opposite directions that are separated by a tangent distance of less than 600 feet, the Reverse Turn (W1-3) sign should be used instead of multiple Turn (W1-1) signs and the Reverse Curve (W1-4) sign should be used instead of multiple Curve (W1-2) signs.

**Option:**

04 A Winding Road (W1-5) sign may be used instead of multiple Turn (W1-1) or Curve (W1-2) signs where there are three or more changes in roadway alignment each separated by a tangent distance of less than 600 feet.



W1-2



W1-1

- **Installed based on criteria in Table 2C-5**
- **W1-1 sign used instead of W1-2 for advisory speeds  $\leq 30$  MPH**
- *W1-3 or W1-4 used when tangent  $\leq 600$  ft between reverse curves/turns*
- Optional W1-5 if three or more curves each separated by tangents  $\leq 600$  ft



W1-3

W1-4



W1-5

06 If the curve has a change in horizontal alignment of 135 degrees or more, the Hairpin Curve (W1-11) sign may be used instead of a Curve or Turn sign.

07 If the curve has a change of direction of approximately 270 degrees, such as on a cloverleaf interchange ramp, the 270-degree Loop (W1-15) sign may be used instead of a Curve or Turn sign.

*Guidance:*

08 *When the Hairpin Curve sign or the 270-degree Loop sign is installed, either a One-Direction Large Arrow (W1-6) sign or Chevron Alignment (W1-8) signs should be installed on the outside of the turn or curve.*



W1-11



W1-15

- Alignment change  $\geq 135$  degrees – W1-11
- Alignment change of about 270 degrees – W1-15
- *Should be supplemented with W1-6 or W1-8*



W1-6



W1-8

W1-11 installed in advance; therefore, W1-8 signs are also used along the off-ramp



**SR 1 southbound at Exit 148**

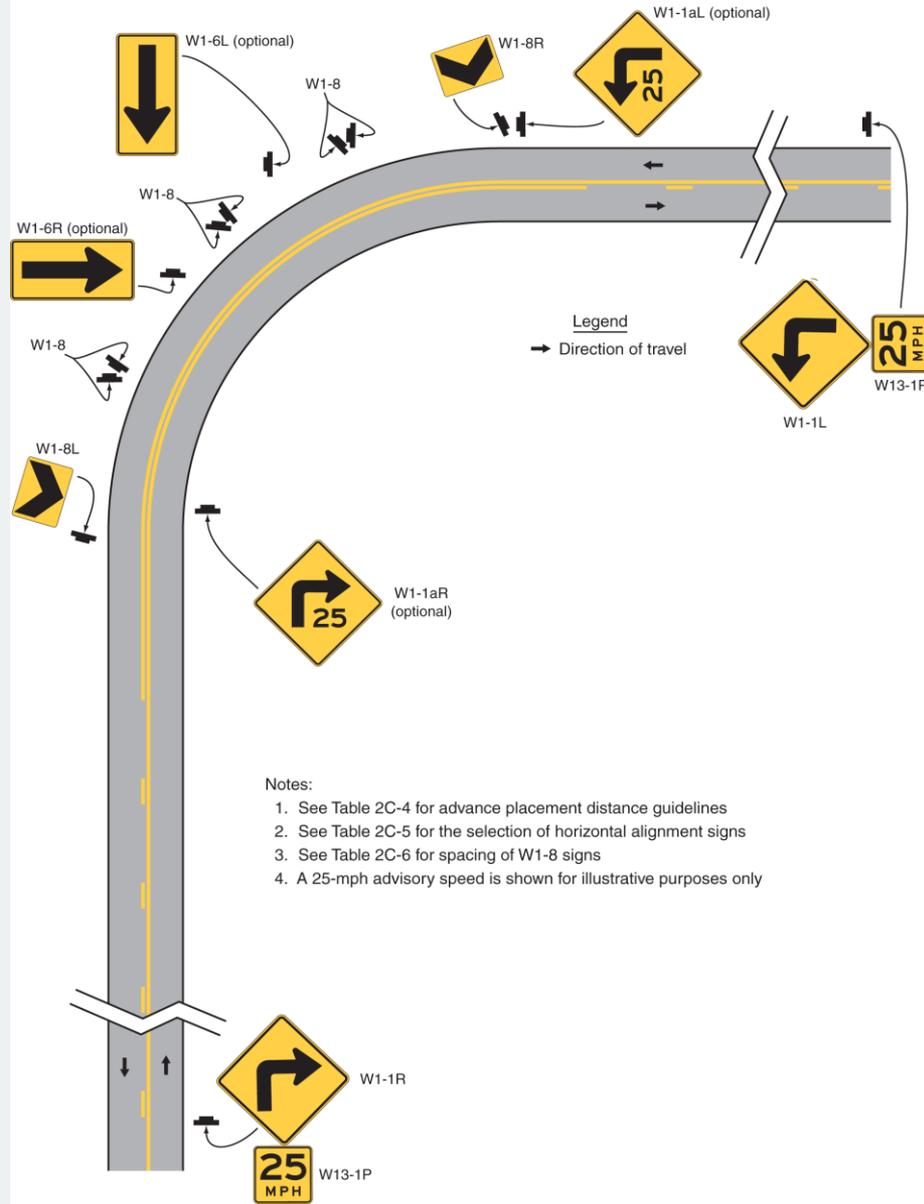
- Installed in advance of curve based on Condition B in Table 2C-4*



**Table 2C-4. Guidelines for Advance Placement of Warning Signs**

Posted or 85th-Percentile Speed	Advance Placement Distance <sup>1</sup>								
	Condition A: Speed reduction and lane changing in heavy traffic <sup>2</sup>	Condition B: Deceleration to the listed advisory speed (mph) for the condition							
		0 <sup>3</sup>	10 <sup>4</sup>	20 <sup>4</sup>	30 <sup>4</sup>	40 <sup>4</sup>	50 <sup>4</sup>	60 <sup>4</sup>	70 <sup>4</sup>
20 mph	225 ft	100 ft <sup>6</sup>	N/A <sup>5</sup>	—	—	—	—	—	—
25 mph	325 ft	100 ft <sup>6</sup>	N/A <sup>5</sup>	N/A <sup>5</sup>	—	—	—	—	—
30 mph	460 ft	100 ft <sup>6</sup>	N/A <sup>5</sup>	N/A <sup>5</sup>	—	—	—	—	—
35 mph	565 ft	100 ft <sup>6</sup>	N/A <sup>5</sup>	N/A <sup>5</sup>	N/A <sup>5</sup>	—	—	—	—
40 mph	670 ft	125 ft	100 ft <sup>6</sup>	100 ft <sup>6</sup>	N/A <sup>5</sup>	—	—	—	—
45 mph	775 ft	175 ft	125 ft	100 ft <sup>6</sup>	100 ft <sup>6</sup>	N/A <sup>5</sup>	—	—	—
50 mph	885 ft	250 ft	200 ft	175 ft	125 ft	100 ft <sup>6</sup>	—	—	—
55 mph	990 ft	325 ft	275 ft	225 ft	200 ft	125 ft	N/A <sup>5</sup>	—	—
60 mph	1,100 ft	400 ft	350 ft	325 ft	275 ft	200 ft	100 ft <sup>6</sup>	—	—
65 mph	1,200 ft	475 ft	450 ft	400 ft	350 ft	275 ft	200 ft	100 ft <sup>6</sup>	—
70 mph	1,250 ft	550 ft	525 ft	500 ft	450 ft	375 ft	275 ft	150 ft	—
75 mph	1,350 ft	650 ft	625 ft	600 ft	550 ft	475 ft	375 ft	250 ft	100 ft <sup>6</sup>

Figure 2C-2. Example of Warning Signs for a Turn



### Standard:

02 The use of the Advisory Speed plaque for horizontal curves shall be in accordance with the information shown in Table 2C-5. The Advisory Speed plaque shall also be used where an engineering study indicates a need to advise road users of the advisory speed for other roadway conditions.

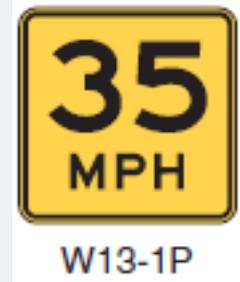
04 Except in emergencies or when the condition is temporary, an Advisory Speed plaque shall not be installed until the advisory speed has been determined by an engineering study.

05 The Advisory Speed plaque shall only be used to supplement a warning sign and shall not be installed as a separate sign installation.

08 The 16, 14, and 12 degrees of ball-bank criteria are comparable to the current AASHTO horizontal curve design guidance. Research has shown that drivers often exceed existing posted advisory curve speeds by 7 to 10 mph.

### Guidance:

09 The advisory speed should be determined based on free-flowing traffic conditions.



- **Installed based on criteria in Table 2C-5**
- **Requires engineering study** (e.g., ball-bank indicator for *free-flow traffic*)
- **Supplements other warning sign; not installed as separate sign**

**Shall not be used as a separate sign; MPH abbreviation shall not have punctuation**



**I-95 northbound off-ramp to US 202**

### Standard:

01 The use of the Chevron Alignment (W1-8) sign (see Figures 2C-1 and 2C-2) to provide additional emphasis and guidance for a change in horizontal alignment shall be in accordance with the information shown in Table 2C-5.

### Option:

02 When used, Chevron Alignment signs may be used instead of or in addition to standard delineators.

04 If used, Chevron Alignment signs shall be installed on the outside of a turn or curve, in line with and at approximately a right angle to approaching traffic. Chevron Alignment signs shall be installed at a minimum height of 4 feet, measured vertically from the bottom of the sign to the elevation of the near edge of the traveled way.



W1-8

- **Installed based on criteria in Table 2C-5**
- Can be used in place of delineators
- **Placed on outside of turn or curve with bottom sign 4 ft above pavement (min.)**

**Guidance:**

- 05 *The approximate spacing of Chevron Alignment signs on the turn or curve measured from the point of curvature (PC) should be as shown in Table 2C-6.*
- 06 *If used, Chevron Alignment signs should be visible for a sufficient distance to provide the road user with adequate time to react to the change in alignment.*

**Standard:**

- 07 **Chevron Alignment signs shall not be placed on the far side of a T-intersection facing traffic on the stem approach to warn drivers that a through movement is not physically possible, as this is the function of a Two-Direction (or One-Direction) Large Arrow sign.**
- 08 **Chevron Alignment signs shall not be used to mark obstructions within or adjacent to the roadway, including the beginning of guardrails or barriers, as this is the function of an object marker (see Section 2C.63).**



- *Spacing based on Table 2C-6*
- *Visible in advance of curve*
- **Shall not be used to delineate end of road or obstructions within or adjacent to road**

**Table 2C-6. Typical Spacing of Chevron Alignment Signs on Horizontal Curves**

Advisory Speed	Curve Radius	Sign Spacing
15 mph or less	Less than 200 feet	40 feet
20 to 30 mph	200 to 400 feet	80 feet
35 to 45 mph	401 to 700 feet	120 feet
50 to 60 mph	701 to 1,250 feet	160 feet
More than 60 mph	More than 1,250 feet	200 feet

Note: The relationship between the curve radius and the advisory speed shown in this table should not be used to determine the advisory speed.

Shall not be used to sign  
the end of roadway



Old County Rd at Glasgow Ave

**Option:**

01 The Turn (W1-1) sign or the Curve (W1-2) sign may be combined with the Cross Road (W2-1) sign or the Side Road (W2-2 or W2-3) sign to create a combination Horizontal Alignment/Intersection (W1-10 series) sign (see Figure 2C-1) that depicts the condition where an intersection occurs within or immediately adjacent to a turn or curve.

**Guidance:**

02 *Elements of the combination Horizontal Alignment/Intersection sign related to horizontal alignment should comply with the provisions of Section 2C.07, and elements related to intersection configuration should comply with the provisions of Section 2C.46. The symbol design should approximate the configuration of the intersecting roadway(s). No more than one Cross Road or two Side Road symbols should be displayed on any one combination Horizontal Alignment/Intersection sign.*

**Standard:**

03 **The use of the combination Horizontal Alignment/Intersection sign shall be in accordance with the appropriate Turn or Curve sign information shown in Table 2C-5.**

- Option to consolidate Alignment and Intersection warning signs
- **Installed in accordance with criteria in Table 2C-5**



W1-10



W1-10a



W1-10b



W1-10c



W1-10d



W1-10e

**Standard:**

- 03 The One-Direction Large Arrow sign shall be a horizontal rectangle with an arrow pointing to the left or right.
- 04 The use of the One-Direction Large Arrow sign shall be in accordance with the information shown in Table 2C-5.
- 05 If used, the One-Direction Large Arrow sign shall be installed on the outside of a turn or curve in line with and at approximately a right angle to approaching traffic.
- 06 The One-Direction Large Arrow sign shall not be used where there is no alignment change in the direction of travel, such as at the beginnings and ends of medians or at center piers.
- 07 The One-Direction Large Arrow sign directing traffic to the right shall not be used in the central island of a roundabout.

*Guidance:*

- 08 *If used, the One-Direction Large Arrow sign should be visible for a sufficient distance to provide the road user with adequate time to react to the change in alignment.*



W1-6

- **Shall meet criteria in Table 2C-5**
- **Installed on outside of curve/turn at a right angle to traffic**
- **Shall not be used at roundabouts**

**Standard:**

01 **Advisory Exit Speed (W13-2) and Advisory Ramp Speed (W13-3) signs (see Figure 2C-1) shall be vertical rectangles. The use of Advisory Exit Speed and Advisory Ramp Speed signs on freeway and expressway ramps shall be in accordance with the information shown in Table 2C-5.**

**Guidance:**

02 *If used, the Advisory Exit Speed sign should be installed along the deceleration lane and the advisory speed displayed should be based on an engineering study. When a Truck Rollover (W1-13) sign (see Section 2C.13) is also installed for the ramp, the advisory exit speed should be based on the truck advisory speed for the horizontal alignment using recommended engineering practices.*

03 *If used, the Advisory Exit Speed sign should be visible in time for the road user to decelerate and make an exiting maneuver.*

**Support:**

04 Table 2C-4 lists recommended advance sign placement distances for deceleration to various advisory speeds.

**Guidance:**

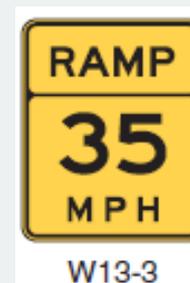
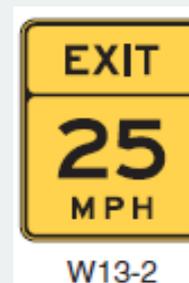
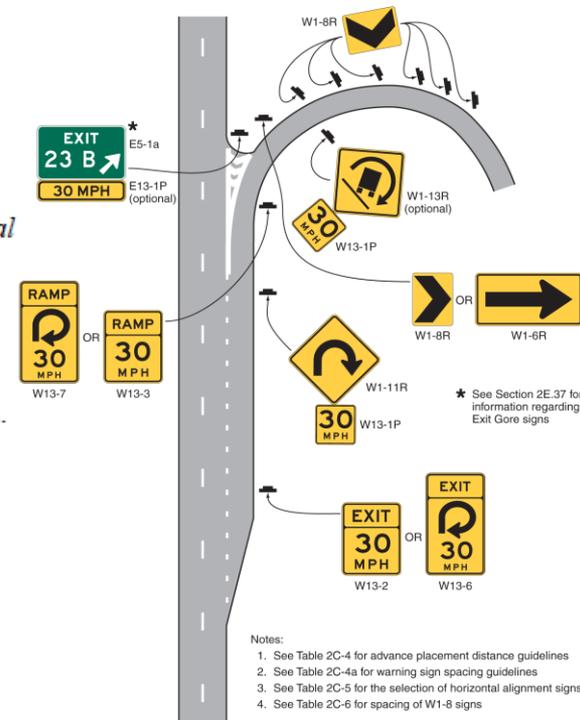
05 *If used, the Advisory Ramp Speed sign should be installed on the ramp to confirm the ramp advisory speed.*

- **Installed based on criteria in Table 2C-5**

- *W13-2 installed along deceleration lane based on Condition B in Table 2C-4*

- *W13-3 should be installed along the off-ramp*

Figure 2C-3. Example of Advisory Speed Signing for an Exit Ramp (Delaware Revision)



**Guidance:**

01 The Hill (W7-1) sign (see Figure 2C-4) should be used in advance of a downgrade where the length, percent of grade, horizontal curvature, and/or other physical features require special precautions on the part of road users.

02 The Hill sign and supplemental grade (W7-3P) plaque (see Section 2C.57) used in combination, or the W7-1a sign used alone, should be installed in advance of downgrades for the following conditions:

- A. 5% grade that is more than 3,000 feet in length,
- B. 6% grade that is more than 2,000 feet in length,
- C. 7% grade that is more than 1,000 feet in length,
- D. 8% grade that is more than 750 feet in length, or
- E. 9% grade that is more than 500 feet in length.

03 These signs should also be installed for steeper grades or where crash experience and field observations indicate a need.



- Used in advance of downgrades of specific length
- Also installed based on crash experience or field observations

**Option:**

01 A HILL BLOCKS VIEW (W7-6) sign (see Figure 2C-4) may be used in advance of a crest vertical curve to advise road users to reduce speed as they approach and traverse the hill as only limited stopping sight distance is available.

**Guidance:**

02 When a HILL BLOCKS VIEW sign is used, it should be supplemented by an Advisory Speed (W13-1P) plaque indicating the recommended speed for traveling over the hillcrest based on available stopping sight distance.



- Advise motorists of crest curve with limited sight distance
- Advisory speed plaque based on stopping sight distance

Appropriate use; however, *should be installed on right-hand side of road and spaced apart from Curve sign*



**Pleasant Hill Rd (near White Clay Creek State Park)**

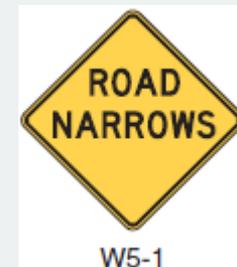
*Guidance:*

01 *Except as provided in Paragraph 2, a ROAD NARROWS (W5-1) sign (see Figure 2C-5) should be used in advance of a transition on two-lane roads where the pavement width is reduced abruptly to a width such that vehicles traveling in opposite directions cannot simultaneously travel through the narrow portion of the roadway without reducing speed.*

*Option:*

02 *The ROAD NARROWS (W5-1) sign may be omitted on low-volume local streets that have speed limits of 30 mph or less.*

- *Abrupt change in roadway cross-section requires braking*
- *Can omit sign on local roads with posted speed  $\leq$  30 MPH*



*Guidance:*

01 *A NARROW BRIDGE (W5-2) sign (see Figure 2C-5) should be used in advance of any bridge or culvert having a two-way roadway clearance width of 16 to 18 feet, or any bridge or culvert having a roadway clearance less than the width of the approach travel lanes.*

- *16 ft to 18 ft clearance or lane widths less than approach*



*Guidance:*

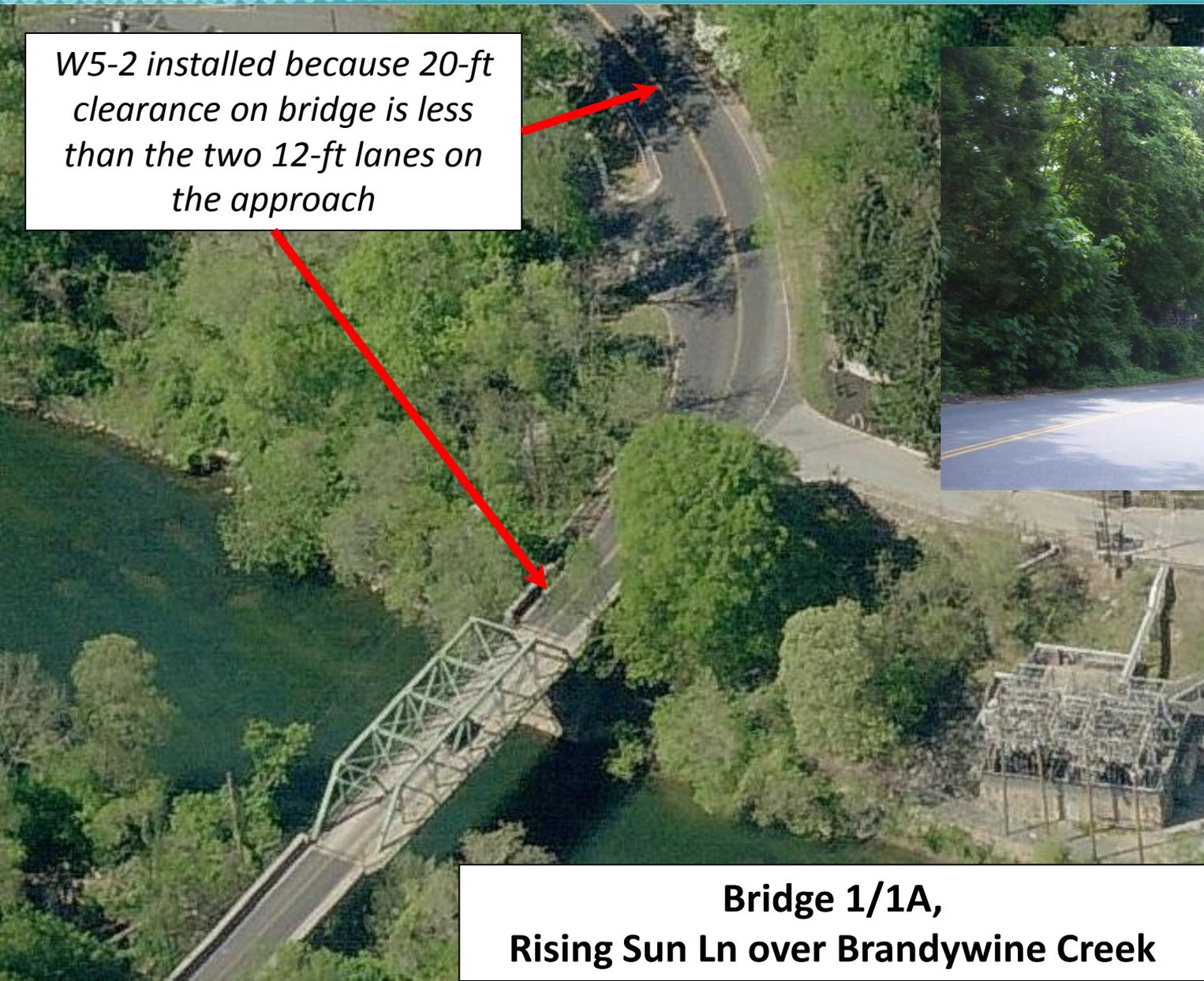
01 *A ONE LANE BRIDGE (W5-3) sign (see Figure 2C-5) should be used on two-way roadways in advance of any bridge or culvert:*

- Having a clear roadway width of less than 16 feet, or*
- Having a clear roadway width of less than 18 feet when commercial vehicles constitute a high proportion of the traffic, or*
- Having a clear roadway width of 18 feet or less where the sight distance is limited on the approach to the structure.*



- *Clearance < 16 ft or < 18 ft with high truck percentage or limited sight distance*

*W5-2 installed because 20-ft clearance on bridge is less than the two 12-ft lanes on the approach*



**Bridge 1/1A,  
Rising Sun Ln over Brandywine Creek**

*Guidance:*

01 *A Divided Highway (W6-1) sign (see Figure 2C-5) should be used on the approaches to a section of highway (not an intersection or junction) where the opposing flows of traffic are separated by a median or other physical barrier.*

**Standard:**

02 **The Divided Highway (W6-1) sign shall not be used instead of a Keep Right (R4-7 series) sign on the approach end of a median island.**



W6-1

- *Installed on approach to median or barrier separated roadway*
- **Shall not be used instead of Keep Right on median nose**

*Guidance:*

01 *A Divided Highway Ends (W6-2) sign (see Figure 2C-5) should be used in advance of the end of a section of physically divided highway (not an intersection or junction) as a warning of two-way traffic ahead.*

02 *The Two-Way Traffic (W6-3) sign (see Section 2C.44) should be used to give warning and notice of the transition to a two-lane, two-way section.*



W6-2

- *Installed in advance of end of divided highway*

*Guidance:*

01 *A Two-Way Traffic (W6-3) sign (see Figure 2C-8) should be used to warn road users of a transition from a multi-lane divided section of roadway to a two-lane, two-way section of roadway.*

02 *A Two-Way Traffic (W6-3) sign with an AHEAD (W16-9P) plaque (see Figure 2C-12) should be used to warn road users of a transition from a one-way street to a two-lane, two-way section of roadway (see Figure 2B-14).*



W6-3

- *Installed adjacent to end of divided highway*
- *Used with AHEAD plaque where one-way street becomes two-way street*

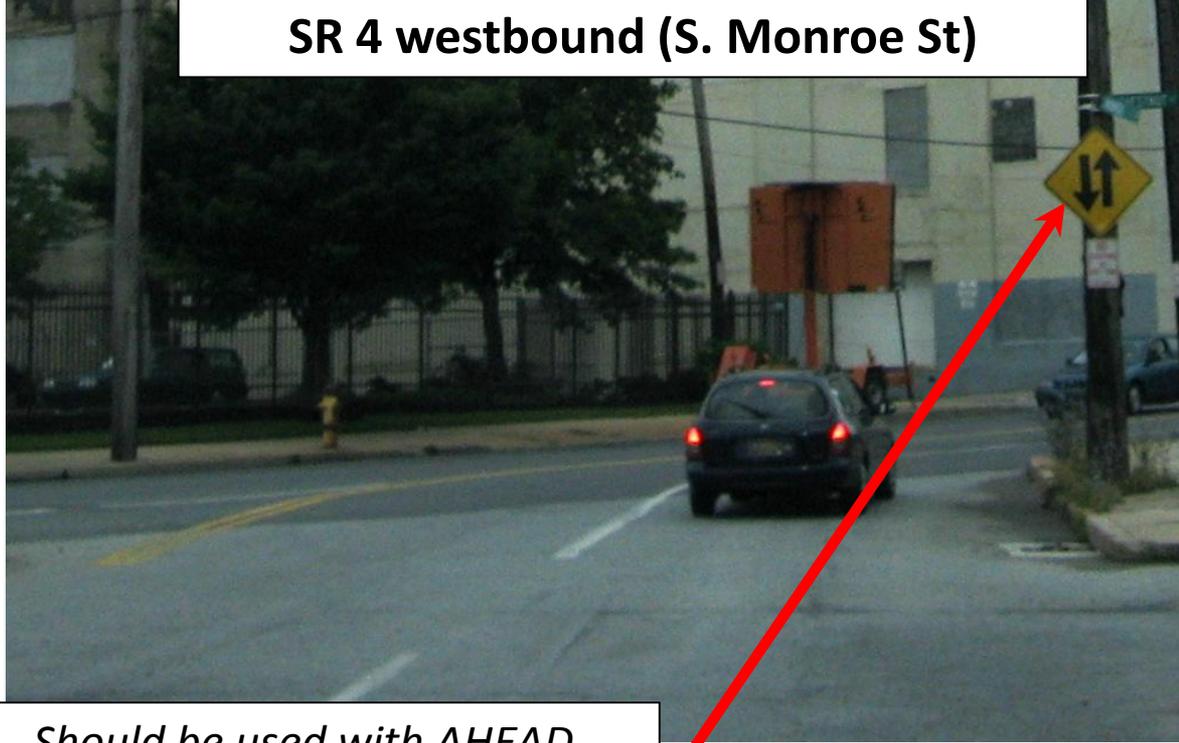
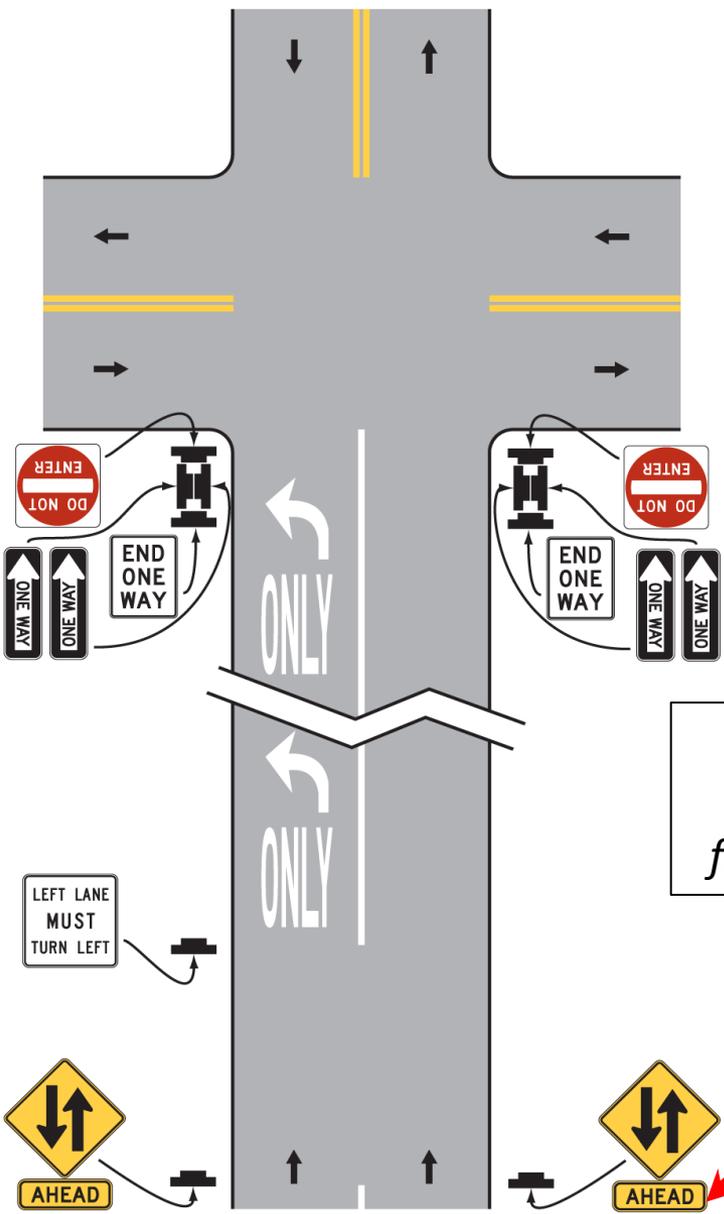
**Shall not be used on the approach  
end of a median island**



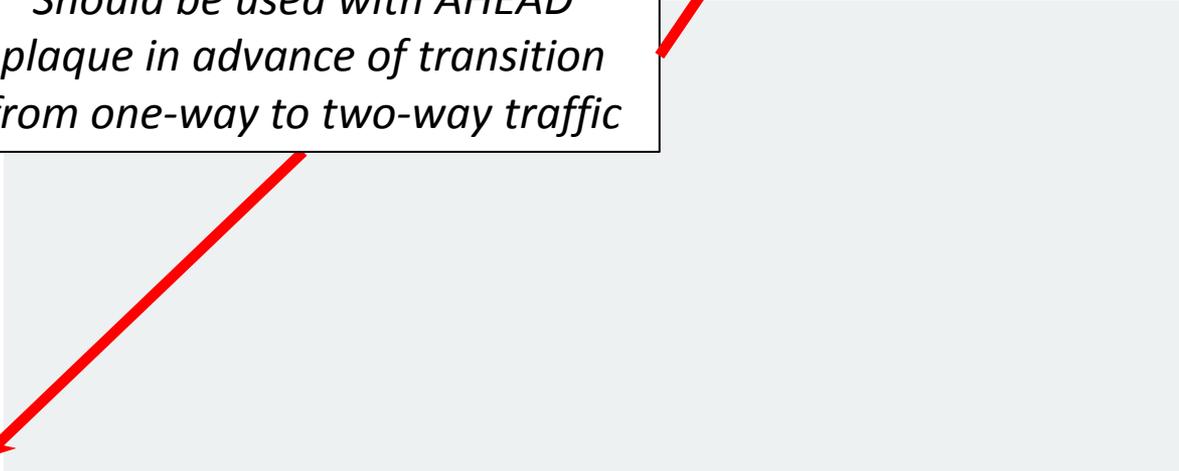
**Traffic calming along Harmony Rd**



SR 4 westbound (S. Monroe St)



*Should be used with AHEAD plaque in advance of transition from one-way to two-way traffic*



## Option:

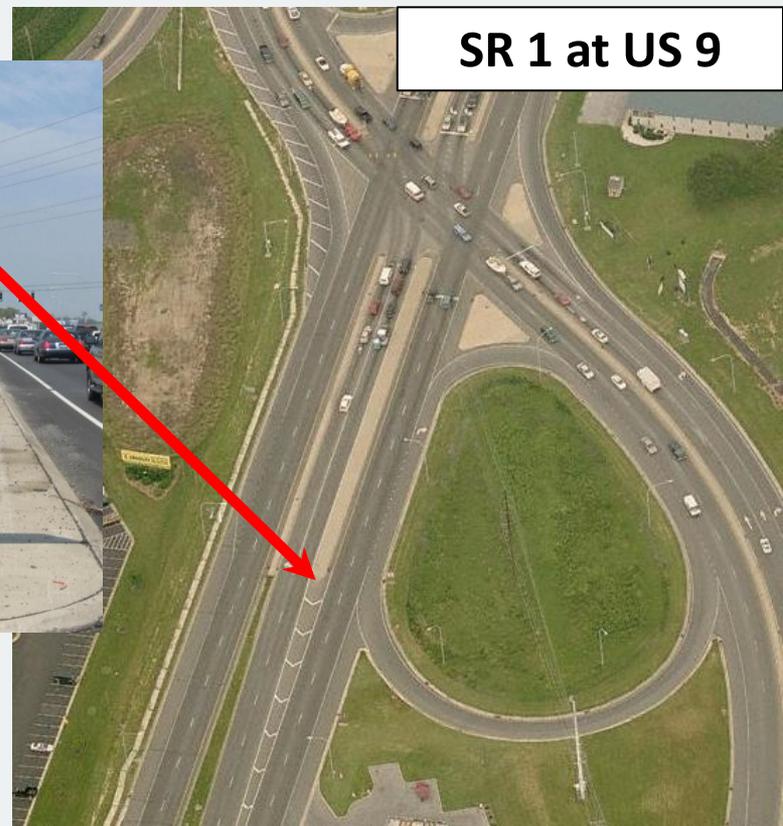
01 The Double Arrow (W12-1) sign (see Figure 2C-5) may be used to advise road users that traffic is permitted to pass on either side of an island, obstruction, or gore in the roadway. Traffic separated by this sign may either rejoin or change directions.

## Guidance:

02 *If used on an island, the Double Arrow sign should be mounted near the approach end.*

03 *If used in front of a pier or obstruction, the Double Arrow sign should be mounted on the face of, or just in front of, the obstruction. Where stripe markings are used on the obstruction, they should be discontinued to leave a 3-inch space around the outside of the sign.*

- Used to advise motorists of diverge with traffic either rejoining (e.g., SR 1 E-ZPass lanes) or changing directions
- *Installed near approach end of median or barrier*



SR 1 at US 9

## Option:

01 The DEAD END (W14-1) sign (see Figure 2C-5) may be used at the entrance of a single road or street that terminates in a dead end or cul-de-sac. The NO OUTLET (W14-2) sign (see Figure 2C-5) may be used at the entrance to a road or road network from which there is no other exit.

02 DEAD END (W14-1a) or NO OUTLET (W14-2a) signs (see Figure 2C-5) may be used in combination with Street Name (D3-1) signs (see Section 2D.43) to warn turning traffic that the cross street ends in the direction indicated by the arrow.

## Standard:

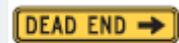
05 When the W14-1 or W14-2 sign is used, the sign shall be posted as near as practical to the entry point or at a sufficient advance distance to permit the road user to avoid the dead end or no outlet condition by turning at the nearest intersecting street.

06 The DEAD END (W14-1a) or NO OUTLET (W14-2a) signs shall not be used instead of the W14-1 or W14-2 signs where traffic can proceed straight through the intersection into the dead end street or no outlet area.

- DEAD END used at single road ending in dead end or cul-de-sac
- NO OUTLET used at entrance to road "network" (e.g., subdivision) with no other exit
- W14-1a and W14-2a signs installed to face cross street traffic
  - May be installed in conjunction with Street Name sign
  - **Shall not replace W14-1 or W14-2 for straight through traffic**



W14-1



W14-1a



W14-2



W14-2a

01 The Low Clearance (W12-2) sign (see Figure 2C-5) shall be used to warn road users of clearances less than 12 inches above the statutory maximum vehicle height.

**Support:**

01A (DE Revision) §4502 and 4503 of Title 21 of the Delaware Code establish a maximum vehicle height of 13 feet 6 inches.

**Guidance:**

02 The actual clearance should be displayed on the Low Clearance sign to the nearest 1 inch not exceeding the actual clearance. However, in areas that experience changes in temperature causing frost action, a reduction, not exceeding 3 inches, should be used for this condition.

03 Where the clearance is less than the legal maximum vehicle height, the W12-2 sign with a supplemental distance plaque should be placed at the nearest intersecting road or wide point in the road at which a vehicle can detour or turn around.

**Option:**

06 The Low Clearance sign may be installed on or in advance of the structure. If a sign is placed on the structure, it may be a rectangular shape (W12-2a) with the appropriate legend (see Figure 2C-5).



W12-2



W12-2a

- DE Code states max. vehicle height of 13'-6"; therefore, **W12-2 installed for all vertical clearances less than 14'-6"**
- Clearances less than 13'-6" should have advance signing for detours or U-turns
- W12-2a may be installed on structure



W8-1



W8-2



W8-3



W8-4



W8-5



W8-5P



W8-5aP



W8-5bP



W8-5cP



W8-7



W8-8



W8-9



W8-11



W8-12



W8-13



W8-14



W8-15



W8-16



W8-17



W8-15P



W8-15P



W8-17P



W8-18



W8-19



W8-21



W8-22



W8-23



W8-25



W17-1



W21-7-DE

**Standard:**

01 The Advance Traffic Control symbol signs (see Figure 2C-6) include the Stop Ahead (W3-1), Yield Ahead (W3-2), and Signal Ahead (W3-3) signs. These signs shall be installed on an approach to a **primary** traffic control device that is not visible for a sufficient distance to permit the road user to respond to the device (see Table 2C-4). The visibility criteria for a traffic control signal shall be based on having a continuous view of at least two signal faces for the distance specified in Table 4D-2.



- **W3-1 and W3-2 installed if STOP or YIELD visibility distance is less than AASHTO stopping sight distance (Exhibit 3-1)**
- *Located in advance of STOP or YIELD based on Condition B (to 0 MPH) in Table 2C-4*

**Table 2C-4. Guidelines for Advance Placement of Warning Signs**

Posted or 85th-Percentile Speed	Advance Placement Distance <sup>1</sup>								
	Condition A: Speed reduction and lane changing in heavy traffic <sup>2</sup>	Condition B: Deceleration to the listed advisory speed (mph) for the condition							
		0 <sup>3</sup>	10 <sup>4</sup>	20 <sup>4</sup>	30 <sup>4</sup>	40 <sup>4</sup>	50 <sup>4</sup>	60 <sup>4</sup>	70 <sup>4</sup>
20 mph	225 ft	100 ft <sup>6</sup>	N/A <sup>5</sup>	—	—	—	—	—	—
25 mph	325 ft	100 ft <sup>6</sup>	N/A <sup>5</sup>	N/A <sup>5</sup>	—	—	—	—	—
30 mph	460 ft	100 ft <sup>6</sup>	N/A <sup>5</sup>	N/A <sup>5</sup>	—	—	—	—	—
35 mph	565 ft	100 ft <sup>6</sup>	N/A <sup>5</sup>	N/A <sup>5</sup>	N/A <sup>5</sup>	—	—	—	—
40 mph	670 ft	125 ft	100 ft <sup>6</sup>	100 ft <sup>6</sup>	N/A <sup>5</sup>	—	—	—	—
45 mph	775 ft	175 ft	125 ft	100 ft <sup>6</sup>	100 ft <sup>6</sup>	N/A <sup>5</sup>	—	—	—
50 mph	885 ft	250 ft	200 ft	175 ft	125 ft	100 ft <sup>6</sup>	—	—	—
55 mph	990 ft	325 ft	275 ft	225 ft	200 ft	125 ft	N/A <sup>5</sup>	—	—
60 mph	1,100 ft	400 ft	350 ft	325 ft	275 ft	200 ft	100 ft <sup>6</sup>	—	—
65 mph	1,200 ft	475 ft	450 ft	400 ft	350 ft	275 ft	200 ft	100 ft <sup>6</sup>	—
70 mph	1,250 ft	550 ft	525 ft	500 ft	450 ft	375 ft	275 ft	150 ft	—
75 mph	1,350 ft	650 ft	625 ft	600 ft	550 ft	475 ft	375 ft	250 ft	100 ft <sup>6</sup>

Design speed (mph)	US Customary			
	Brake reaction distance (ft)	Braking distance on level (ft)	Stopping sight distance	
			Calculated (ft)	Design (ft)
15	55.1	21.6	76.7	80
20	73.5	38.4	111.9	115
25	91.9	60.0	151.9	155
30	110.3	86.4	196.7	200
35	128.6	117.6	246.2	250
40	147.0	153.6	300.6	305
45	165.4	194.4	359.8	360
50	183.8	240.0	423.8	425
55	202.1	290.3	492.4	495
60	220.5	345.5	566.0	570
65	238.9	405.5	644.4	645
70	257.3	470.3	727.6	730
75	275.6	539.9	815.5	820
80	294.0	614.3	908.3	910

Note: Brake reaction distance predicated on a time of 2.5 s; deceleration rate of 3.4 m/s<sup>2</sup> [11.2 ft/s<sup>2</sup>] used to determine calculated sight distance.

**Standard:**

01 The Advance Traffic Control symbol signs (see Figure 2C-6) include the Stop Ahead (W3-1), Yield Ahead (W3-2), and Signal Ahead (W3-3) signs. These signs shall be installed on an approach to a primary traffic control device that is not visible for a sufficient distance to permit the road user to respond to the device (see Table 2C-4). The visibility criteria for a traffic control signal shall be based on having a continuous view of at least two signal faces for the distance specified in Table 4D-2.

**Option:**

01A (DE Revision) Signal Ahead (W3-3) signs may be omitted on the approaches to traffic signals along corridors with closely spaced traffic signals where there is sufficient signal visibility (see Table 2C-4).

01B (DE Revision) A XX SIGNALS NEXT XX MILES (W3-3P-DE) sign (see Figure 2C-12) may be mounted below a Signal Ahead (W3-3) sign located on the approach to the first upstream traffic signal along a corridor of closely spaced traffic signals.



W3-3



W3-3P-DE

- **W3-3 installed if signal visibility for all primary signal indications < Table 4D-2**
- DE Option: W3-3 signs not required at every signal along corridors with closely spaced signals

**Table 4D-2. Minimum Sight Distance for Signal Visibility**

85th-Percentile Speed	Minimum Sight Distance
20 mph	175 feet
25 mph	215 feet
30 mph	270 feet
35 mph	325 feet
40 mph	390 feet
45 mph	460 feet
50 mph	540 feet
55 mph	625 feet
60 mph	715 feet

Note: Distances in this table are derived from stopping sight distance plus an assumed queue length for shorter cycle lengths (60 to 75 seconds).

Option:

01C (DE Revision) A Pedestrian Hybrid Beacon Ahead (W3-3-DE1) sign (see Figure 2C-12) may be installed on the approach to a pedestrian hybrid beacon. A supplemental educational plaque containing the legend PED SIGNAL AHEAD may be installed below a Pedestrian Hybrid Beacon Ahead sign.

11A (DE Revision) A RED SIGNAL AHEAD WHEN FLASHING (W3-3-DE) sign (see Figure 2C-6) supplemented with warning beacons may be installed on an approach to a traffic signal where engineering judgment indicates a need to provide additional warning to motorists of a red signal indication.

- DE Option: Pedestrian Hybrid Beacon (“HAWK”) Ahead (W3-3-DE1) sign and educational plaque on approach to “HAWK” signals
- DE Option: RED SIGNAL AHEAD WHEN FLASHING (W3-3-DE) installed to address sight distance or high crash locations



SR 72 at Farm Ln / Webb Ln

**Standard:**

01 A DRAW BRIDGE (W3-6) sign (see Figure 2C-6) shall be used in advance of movable bridge signals and gates (see Section 4J.02) to give warning to road users, except in urban conditions where such signing would not be practical.



- **W3-6 required in advance of all movable bridges, except where impractical in urban areas**



*Guidance:*

- 03 *The Merge sign should be installed on the side of the major roadway where merging traffic will be encountered and in such a position as to not obstruct the road user's view of entering traffic.*
- 04 *Where two roadways of approximately equal importance converge, a Merge sign should be placed on each roadway.*
- 05 *When a Merge sign is to be installed on an entering roadway that curves before merging with the major roadway, such as a ramp with a curving horizontal alignment as it approaches the major roadway, the Entering Roadway Merge (W4-5) sign (see Figure 2C-8) should be used to better portray the actual geometric conditions to road users on the entering roadway.*



W4-1



W4-5

- *Installed along major road approaching the merge point*
- *Installed on both roads if roads are of equal importance*
- *W4-5 used on curved alignments – e.g., ramp approaching major road*

*Guidance:*

- 01 *The Added Lane (W4-3) sign (see Figure 2C-8) should be installed in advance of a point where two roadways converge and merging movements are not required. When possible, the Added Lane sign should be placed such that it is visible from both roadways; if this is not possible, an Added Lane sign should be placed on the side of each roadway.*
- 02 *When an Added Lane sign is to be installed on a roadway that curves before converging with another roadway that has a tangent alignment at the point of convergence, the Entering Roadway Added Lane (W4-6) sign (see Figure 2C-8) should be used to better portray the actual geometric conditions to road users on the curving roadway.*



W4-3



W4-6

- *Used in advance of a lane addition in a location visible to both roads*
- *Installed on both roads if one sign is insufficient for both roads*
- *W4-6 used on curved alignments – e.g., ramp approaching major road*

## I-95 northbound at I-295 on-ramp



*Should only install one W4-3 if sign is clearly visible from both roads*

*Should have W4-6 facing SR 141 traffic because of curved alignment*



*Additional sign is used because I-95 NB sign is not clearly visible to SR 141 traffic*

## SR 141 on-ramp to I-95 northbound

**Guidance:**

01 The LANE ENDS MERGE LEFT (RIGHT) (W9-2) sign or the Lane Ends (W4-2) sign should be used to warn of the reduction in the number of traffic lanes in the direction of travel on a multi-lane highway (see Figure 2C-8).

01A (DE Revision) The LANE ENDS ((Left, Right) Arrows) (W9-2-DE) sign should be placed at the upstream end of the taper at lane reductions along roadways with a posted speed limit or 85<sup>th</sup> percentile speed equal to or greater than 45 mph.

**Option:**

01C (DE Revision) Lane-reduction signing shown in Figures 3B-14A, 3B-14B, and 3B-14C may be adjusted based on engineering judgment at existing locations where space is limited due to site-specific conditions.

**Guidance:**

03 If used, the RIGHT (LEFT) LANE ENDS (W9-1) sign should be installed adjacent to the Lane-Reduction Arrow pavement markings.

**Option:**

04 On one-way streets or on divided highways where the width of the median will permit, two Lane Ends signs may be placed facing approaching traffic, one on the right-hand side and the other on the left-hand side or median.

07 Lane Ends signs should not be installed in advance of the downstream end of an acceleration lane.

**Standard:**

08 In dropped lane situations, regulatory signs (see Section 2B.20) shall be used to inform road users that a through lane is becoming a mandatory turn lane. The W4-2, W9-1, and W9-2 signs shall not be used in dropped lane situations.

- W9-1 installed adjacent to arrow marking
- Should not be installed for acceleration lanes
- **Shall use regulatory signs for lane drops, not warning signs** →
- DE Option: Sign spacing shown in Fig. 3B-14A, 3B-14B, and 3B-14C may be adjusted where space is limited



W4-2



W9-2-DE



W9-1

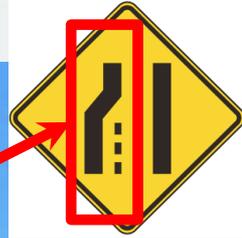


W9-2



R3-7

Additional sign can be installed on left-hand side where space permits; **standard sign symbol shall be used**



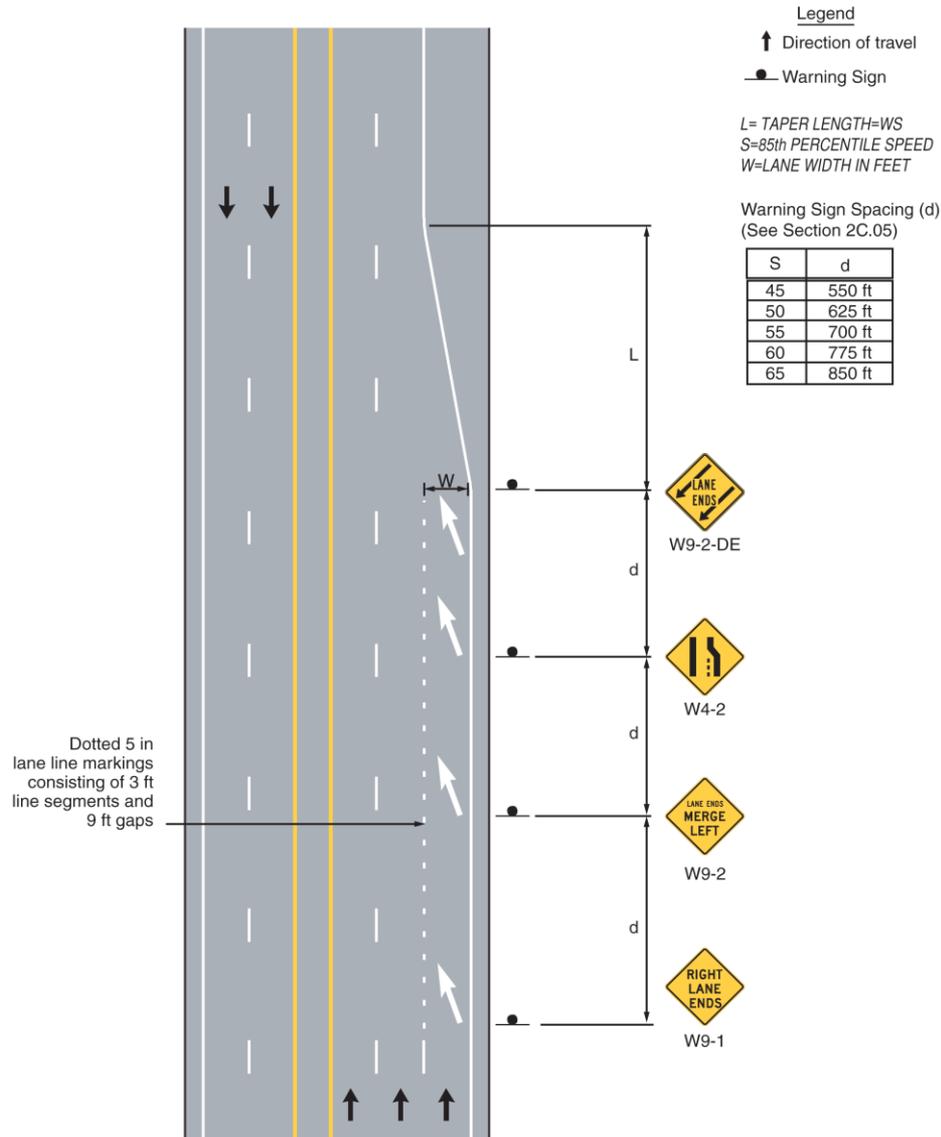
SR 273 on-ramp to SR 1 northbound



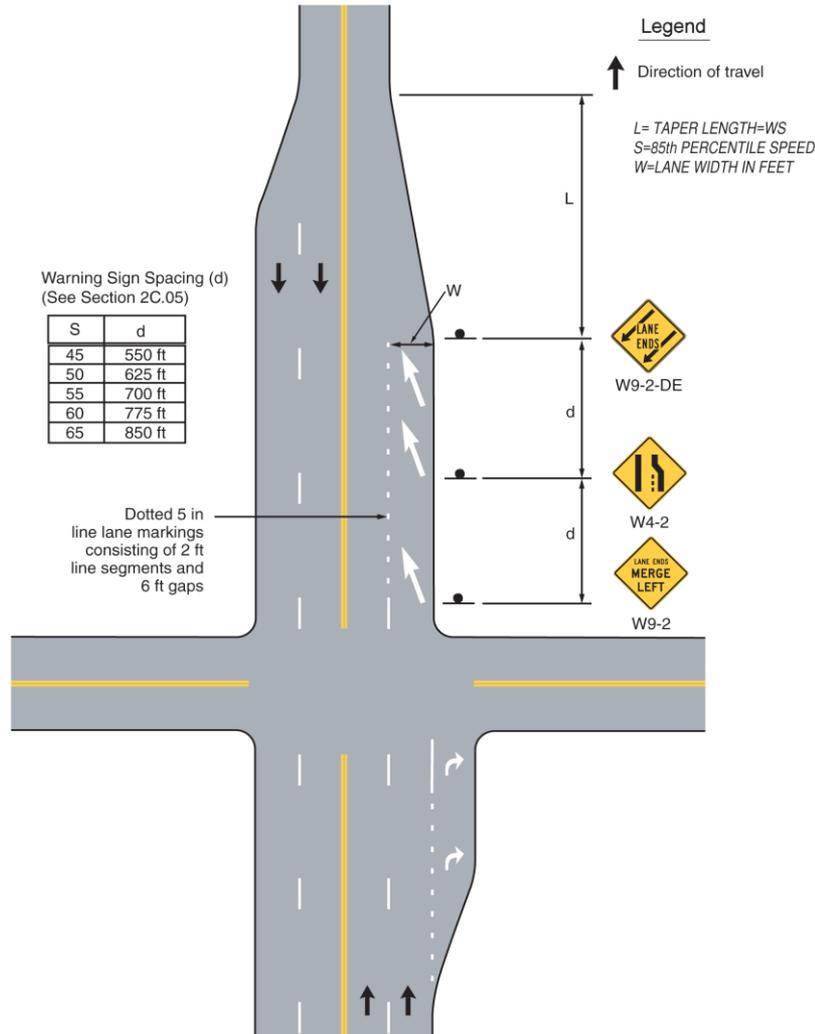
**Lane Ends warning signs shall not be used at lane drops**

**SR 2 / SR 72 (Library Ave) north of SR 4**

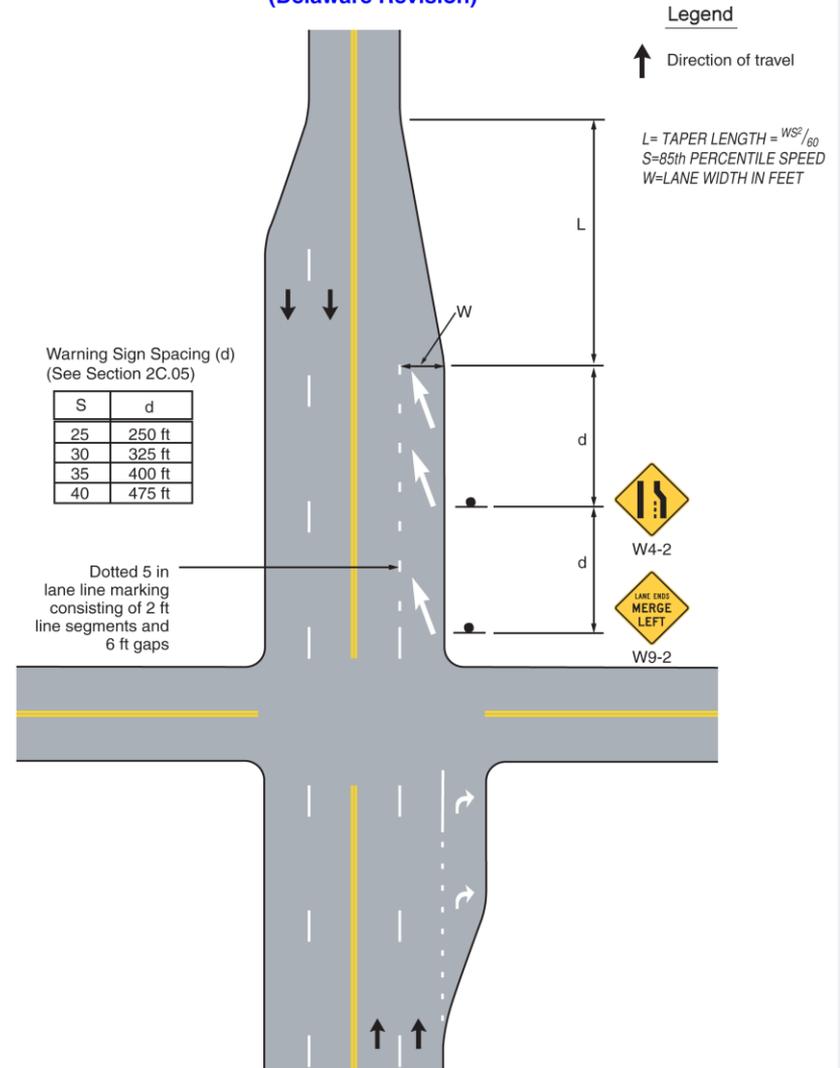
**Figure 3B-14A. Example of Lane Reduction Markings for Interstates, Freeways or Expressways (45 MPH or greater) (Delaware Revision)**



**Figure 3B-14B. Example of Lane Reduction Beyond Intersection Marking Application Along All Other Roads (Non-Interstates, Freeways or Expressways) (45 MPH or greater) (Delaware Revision)**



**Figure 3B-14C. Example of Lane Reduction Beyond Intersection Marking Application Along All Other Roads (Non-Interstates, Freeways or Expressways) (less than 45 MPH) (Delaware Revision)**



**Option:**

01 (DE Revision) A Cross Road (W2-1) symbol, Side Road (W2-2 or W2-3) symbol, T-Symbol (W2-4), Y-Symbol (W2-5), WATCH FOR TURNING TRAFFIC (W21-9-DE), or WATCH FOR ENTERING TRAFFIC (W21-10-DE) sign or WATCH FOR TURNING TRAFFIC (W21-9P-DE) plaque (see Figure 2C-9) may be used in advance of an intersection to indicate the presence of an intersection and the possibility of turning or entering traffic.

**Guidance:**

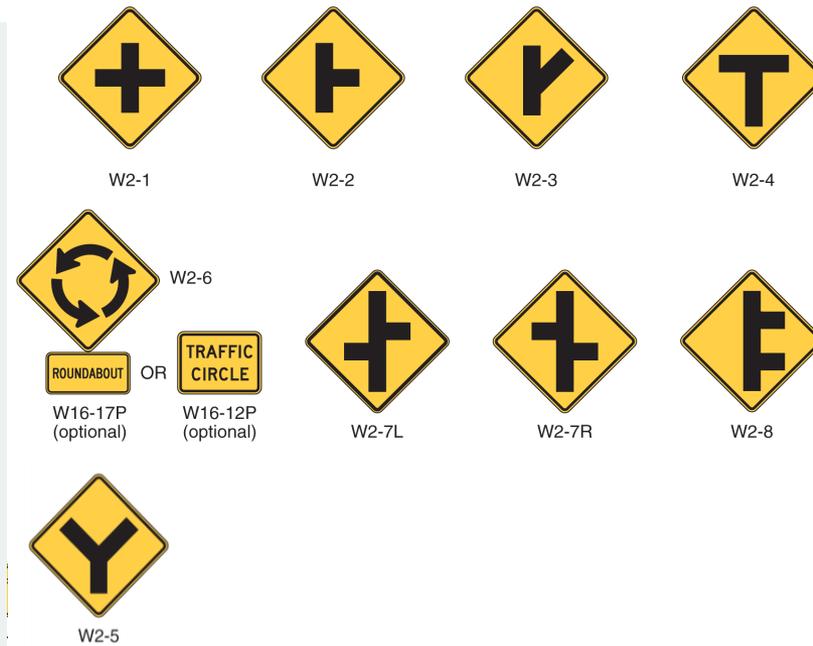
03 If an approach to a roundabout has a statutory or posted speed limit of 40 mph or higher, the Circular Intersection (W2-6) symbol sign should be installed in advance of the circular intersection.

03A (DE Revision) The Circular Intersection (W2-6) symbol sign should be installed on all approaches in advance of a circular intersection along a state-maintained roadway regardless of the statutory or posted speed limit (see Figures 2B-21 through 2B-23).

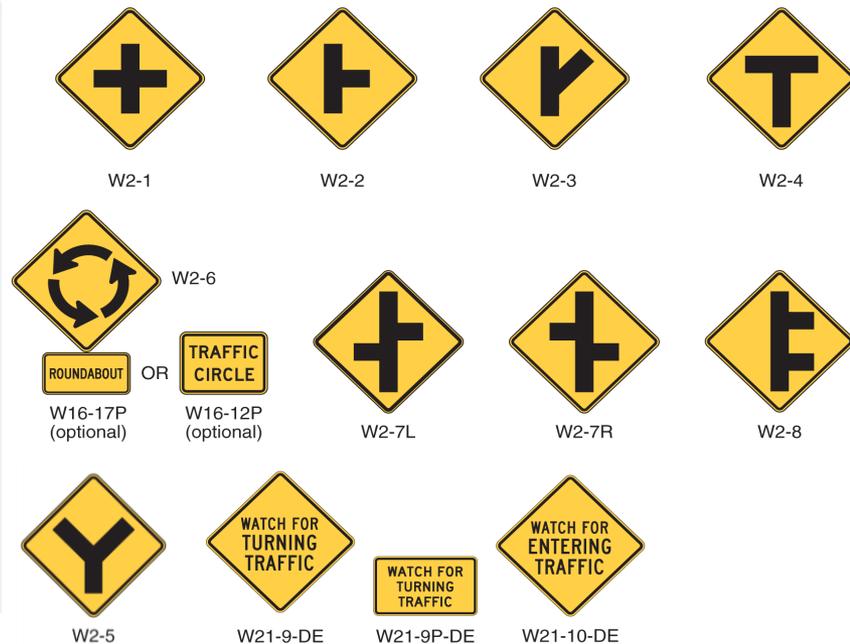
**Option:**

06 An advance street name plaque (see Section 2C.58) may be installed above or below an Intersection Warning sign.

- DE Guidance: W2-6 on the approaches to all roundabouts along state-maintained roads
- Typically include W16-8P (Advance Street Name) plaque with Intersection Warning assembly



- Installed in advance of intersection based on Condition B (to 0 MPH) in Table 2C-4



**Table 2C-4. Guidelines for Advance Placement of Warning Signs**

Posted or 85th-Percentile Speed	Advance Placement Distance <sup>1</sup>								
	Condition A: Speed reduction and lane changing in heavy traffic <sup>2</sup>	Condition B: Deceleration to the listed advisory speed (mph) for the condition							
		0 <sup>3</sup>	10 <sup>4</sup>	20 <sup>4</sup>	30 <sup>4</sup>	40 <sup>4</sup>	50 <sup>4</sup>	60 <sup>4</sup>	70 <sup>4</sup>
20 mph	225 ft	100 ft <sup>6</sup>	N/A <sup>5</sup>	—	—	—	—	—	—
25 mph	325 ft	100 ft <sup>6</sup>	N/A <sup>5</sup>	N/A <sup>5</sup>	—	—	—	—	—
30 mph	460 ft	100 ft <sup>6</sup>	N/A <sup>5</sup>	N/A <sup>5</sup>	—	—	—	—	—
35 mph	565 ft	100 ft <sup>6</sup>	N/A <sup>5</sup>	N/A <sup>5</sup>	N/A <sup>5</sup>	—	—	—	—
40 mph	670 ft	125 ft	100 ft <sup>6</sup>	100 ft <sup>6</sup>	N/A <sup>5</sup>	—	—	—	—
45 mph	775 ft	175 ft	125 ft	100 ft <sup>6</sup>	100 ft <sup>6</sup>	N/A <sup>5</sup>	—	—	—
50 mph	885 ft	250 ft	200 ft	175 ft	125 ft	100 ft <sup>6</sup>	—	—	—
55 mph	990 ft	325 ft	275 ft	225 ft	200 ft	125 ft	N/A <sup>5</sup>	—	—
60 mph	1,100 ft	400 ft	350 ft	325 ft	275 ft	200 ft	100 ft <sup>6</sup>	—	—
65 mph	1,200 ft	475 ft	450 ft	400 ft	350 ft	275 ft	200 ft	100 ft <sup>6</sup>	—
70 mph	1,250 ft	550 ft	525 ft	500 ft	450 ft	375 ft	275 ft	150 ft	—
75 mph	1,350 ft	650 ft	625 ft	600 ft	550 ft	475 ft	375 ft	250 ft	100 ft <sup>6</sup>

08 *Intersection Warning signs, other than the Circular Intersection (W2-6) symbol sign and the T-intersection (W2-4) symbol sign should not be used on approaches controlled by STOP signs, YIELD signs, or signals.*

- *Should not be installed on approaches controlled by STOP signs, YIELD signs, or signals*

*Should not be installed on signal-controlled approaches*



**US 13 at Paddock Rd / Joe Goldsborough Rd**

**Standard:**

02 If used, it shall be installed on the far side of a T-intersection in line with, and at approximately a right angle to, traffic approaching from the stem of the T-intersection.

03 The Two-Direction Large Arrow sign shall not be used where there is no change in the direction of travel such as at the beginnings and ends of medians or at center piers.

04 The Two-Direction Large Arrow sign directing traffic to the left and right shall not be used in the central island of a roundabout.

**Guidance:**

05 *The Two-Direction Large Arrow sign should be visible for a sufficient distance to provide the road user with adequate time to react to the intersection configuration.*

05A *(DE Revision) The Two-Direction Large Arrow sign should not be installed on the far side of a T-intersection along a divided highway for traffic approaching from the stem of the T-intersection.*



W1-7

- **If used, shall be installed on far side of “T” intersection**
- Typically supplemented with Type 4 object marker(s)
- DE Guidance – *Should not be installed at T-intersections along divided highways*



SR 26 at SR 30

**Standard:**

01 At locations where either a W25-1 or a W25-2 sign is required based on the provisions in Section 4D.05, the W25-1 or W25-2 sign (see Figure 2C-9) shall be installed near the left-most signal head. The W25-1 and W25-2 signs shall be vertical rectangles.

- **Installed for permissive left turns with potential “yellow trap” scenario (see Section 4D.05)**

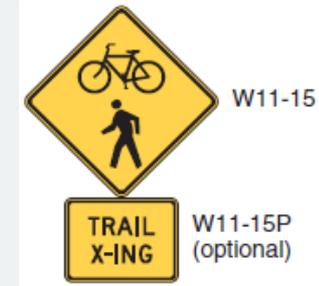


**Guidance:**

- 03 *Vehicular Traffic Warning signs should be used only at locations where the road user's sight distance is restricted, or the condition, activity, or entering traffic would be unexpected.*
- 05 The combined Bicycle/Pedestrian (W11-15) sign may be used where both bicyclists and pedestrians might be crossing the roadway, such as at an intersection with a shared-use path. A TRAIL X-ING (W11-15P) supplemental plaque (see Figure 2C-10) may be mounted below the W11-15 sign. The TRAIL CROSSING (W11-15a) sign may be used to warn of shared-use path crossings where pedestrians, bicyclists, and other user groups might be crossing the roadway.
- 08 *If used in advance of a pedestrian and bicycle crossing, a W11-15 or W11-15a sign should be supplemented with an AHEAD or XX FEET plaque to inform road users that they are approaching a point where crossing activity might occur.*

**Standard:**

- 09 **If a post-mounted W11-1, W11-11, W11-15, or W11-15a sign is placed at the location of the crossing point where golf carts, pedestrians, bicyclists, or other shared-use path users might be crossing the roadway, a diagonal downward pointing arrow (W16-7P) plaque (see Figure 2C-12) shall be mounted below the sign. If the W11-1, W11-11, W11-15, or W11-15a sign is mounted overhead, the W16-7P supplemental plaque shall not be used.**



- *Installed at locations with limited sight distance or where entering traffic is unexpected*
- New combined Bicycle/Pedestrian sign (W11-15)
- *AHEAD or XX FT plaque if warning sign is installed in advance of specific ped or bike crossing*
- **W16-7P plaque required if warning sign is installed adjacent to ped, bike, or golf cart crossing**



11 The Emergency Vehicle (W11-8) sign (see Figure 2C-10) with the EMERGENCY SIGNAL AHEAD (W11-12P) supplemental plaque (see Figure 2C-10) shall be placed in advance of all emergency-vehicle traffic control signals (see Chapter 4G).

11A (DE Revision) The FIRE SIGNAL STOP ON FLASHING RED (W11-12-DE) sign (see Figure 2C-10) shall not be used at new emergency-vehicle traffic control signals (see Section 2B.53 and Chapter 4G).

12A (DE Revision) The EMERGENCY VEHICLES (W11-8-DE) sign (see Figure 2C-10) may be used in advance of an emergency facility that does not include a fire company.



W11-8-DE

- **W11-8 sign and W11-12P plaque in advance of all emergency-vehicle traffic control signals**
- DE Option: W11-8-DE at locations without fire companies

W11-8 and W11-12P signs shall be installed in advance of all emergency-vehicle signals



Old County Rd approaching Aetna Fire Station

Option:

01 (DE Revision) Non-Vehicular Warning (W11-2, W11-3, W11-4, W11-6, W11-7, W11-9, W11-16 through W11-22, W11-23-DE, W21-11-DE, W21-11P-DE, W21-14-DE, and W21-15-DE) signs (see Figure 2C-11) may be used to alert road users in advance of locations where unexpected entries into the roadway might occur or where shared use of the roadway by pedestrians, animals, or equestrians might occur.

Guidance:

03 If used in advance of a pedestrian, snowmobile, or equestrian crossing, the W11-2, W11-6, W11-7, and W11-9 signs should be supplemented with plaques (see Section 2C.55) with the legend AHEAD or XX FEET to inform road users that they are approaching a point where crossing activity might occur.

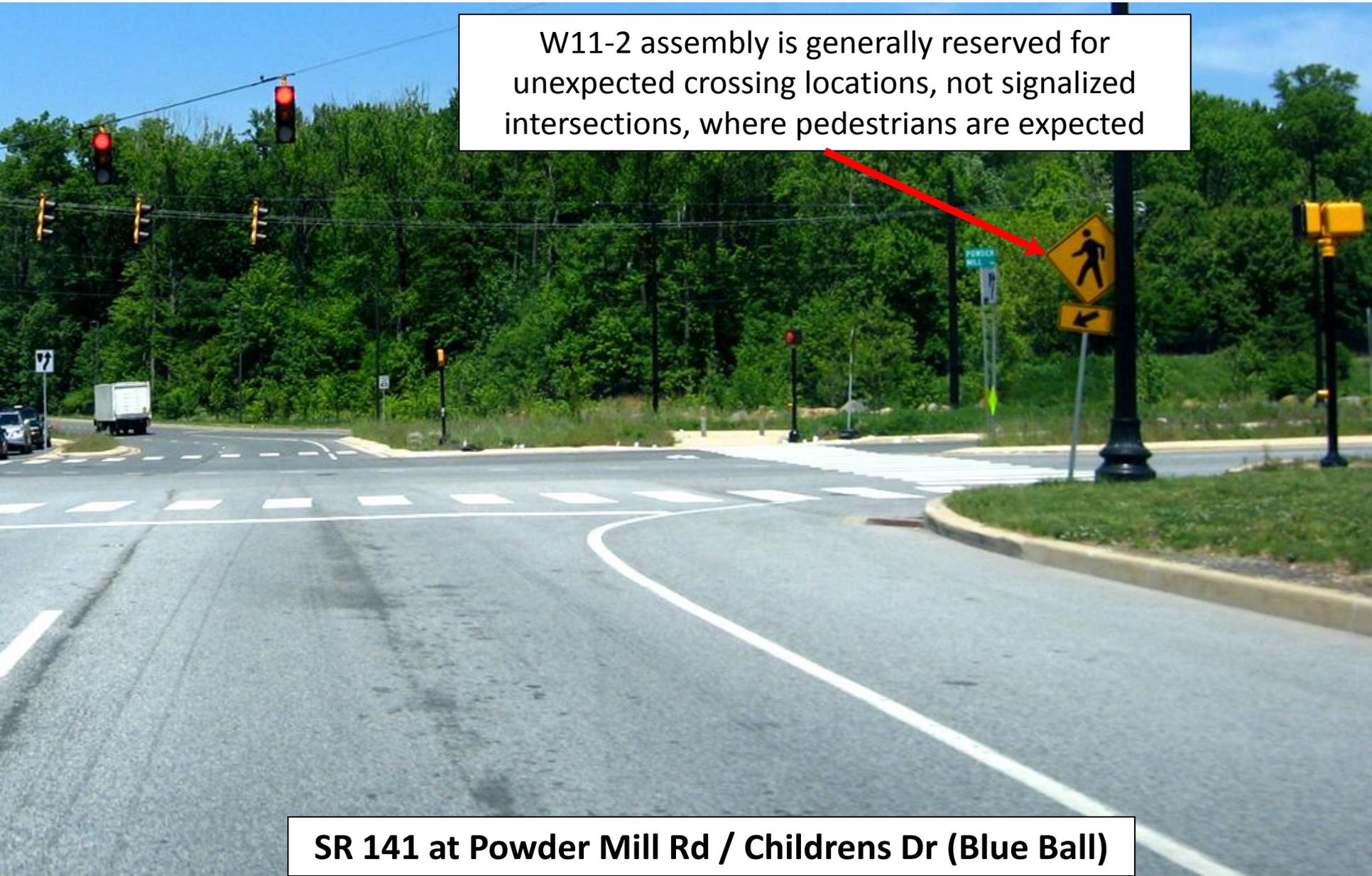
- Used at locations with unexpected entries into the roadway
- *AHEAD or XX FT plaque if warning sign is installed in advance of specific crossing*

Figure 2C-11. Non-Vehicular Warning Signs  
(Delaware Revision)



\* A fluorescent yellow-green background color may be used for this sign or plaque.

W11-2 assembly is generally reserved for unexpected crossing locations, not signalized intersections, where pedestrians are expected

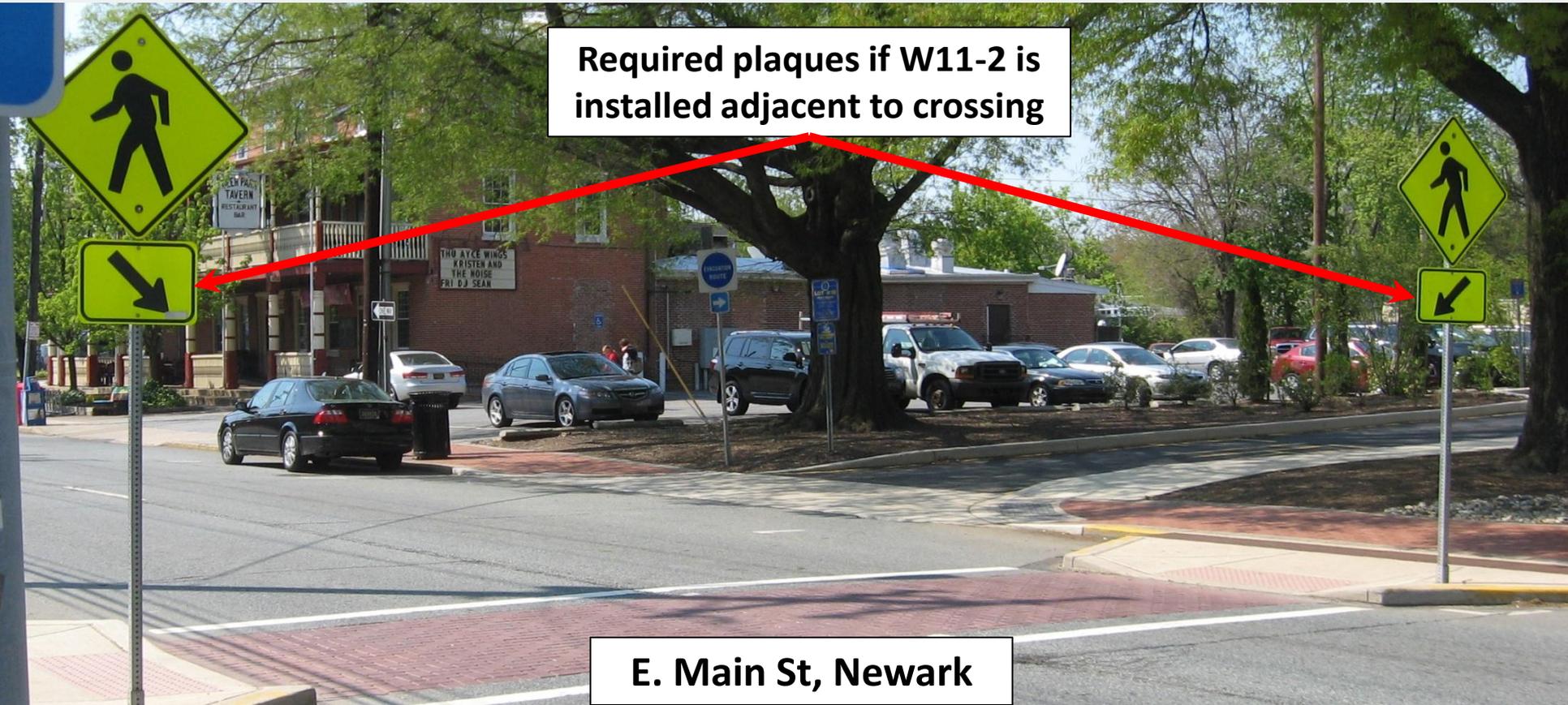


SR 141 at Powder Mill Rd / Childrens Dr (Blue Ball)

**Standard:**

04 If a post-mounted W11-2, W11-6, W11-7, or W11-9 sign is placed at the location of the crossing point where pedestrians, snowmobilers, or equestrians might be crossing the roadway, a diagonal downward pointing arrow (W16-7P) plaque (see Figure 2C-12) shall be mounted below the sign. If the W11-2, W11-6, W11-7, or W11-9 sign is mounted overhead, the W16-7P plaque shall not be used.

- **W16-7P plaque required if warning sign is installed adjacent to crossing**



Required plaques if W11-2 is installed adjacent to crossing

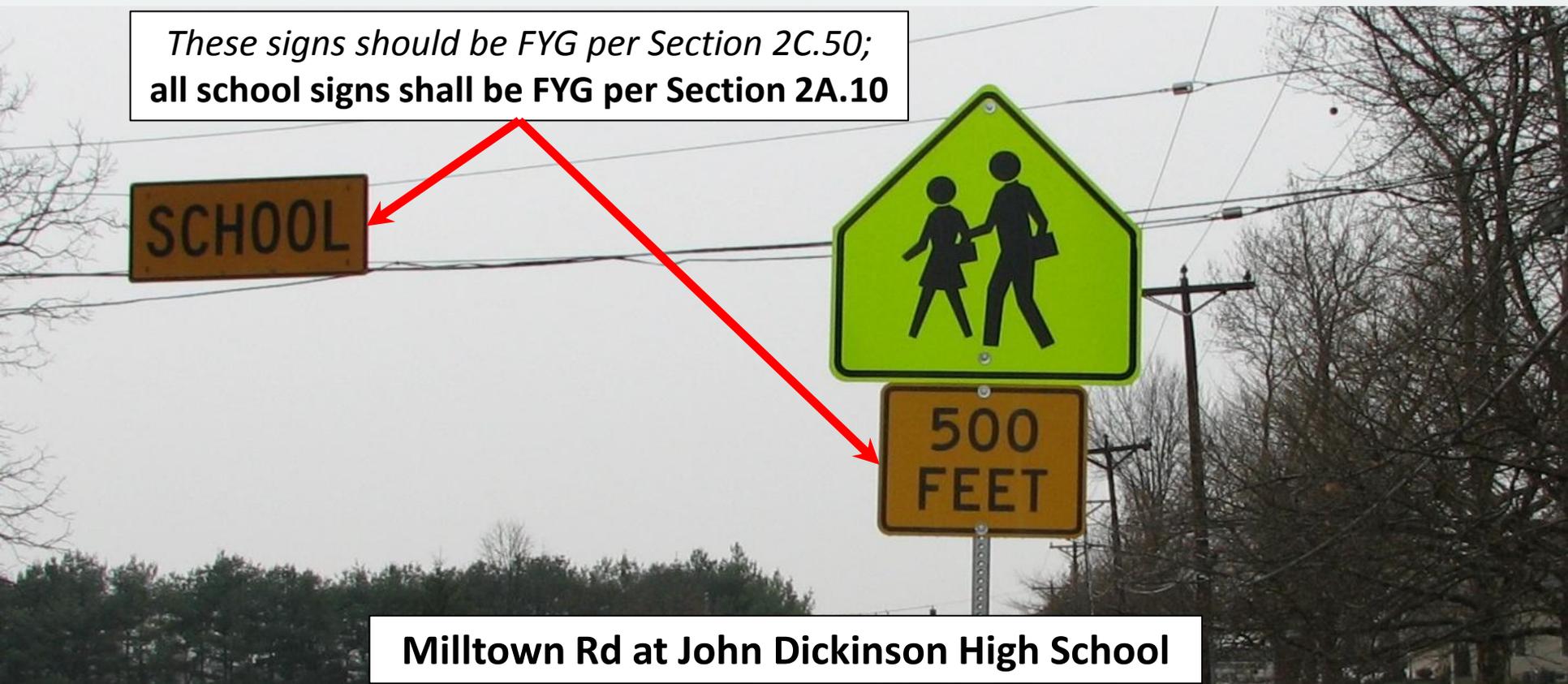
E. Main St, Newark

**Guidance:**

10 *When a fluorescent yellow-green background is used, a systematic approach featuring one background color within a zone or area should be used. The mixing of standard yellow and fluorescent yellow-green backgrounds within a selected site area should be avoided.*

- *Avoid mixing yellow and FYG backgrounds*

*These signs should be FYG per Section 2C.50; all school signs shall be FYG per Section 2A.10*



**Milltown Rd at John Dickinson High School**

**Option:**

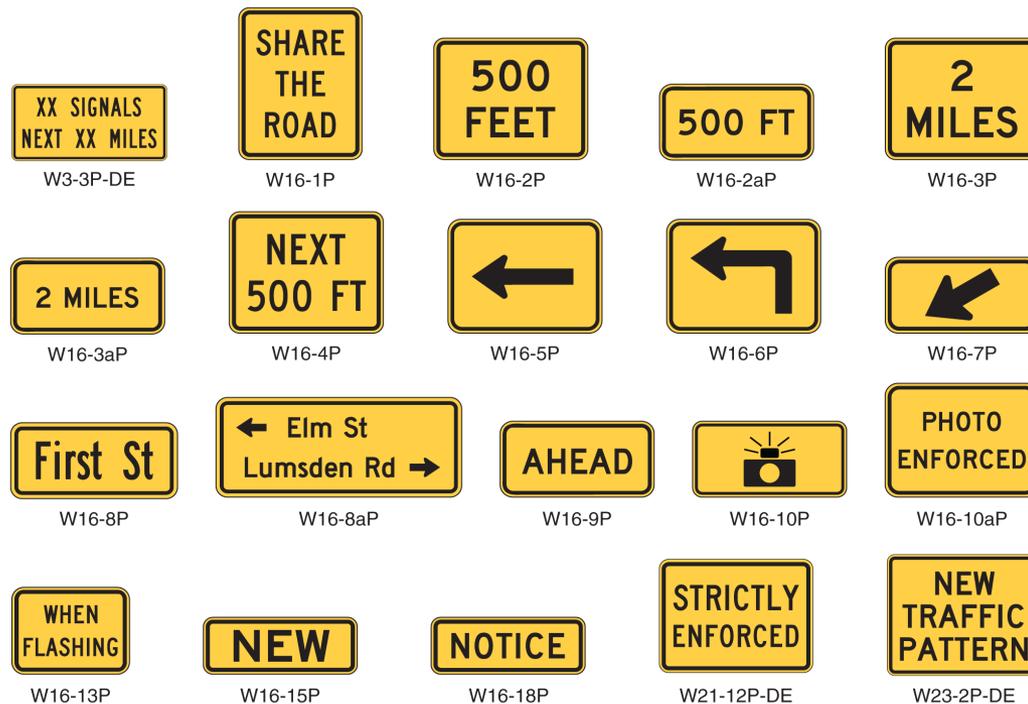
01 A supplemental warning plaque (see Figure 2C-12) may be displayed with a warning or regulatory sign when engineering judgment indicates that road users require additional warning information beyond that contained in the main message of the warning or regulatory sign.

**Standard:**

02 Supplemental warning plaques shall be used only in combination with warning or regulatory signs. They shall not be mounted alone or displayed alone. If used, a supplemental warning plaque shall be installed on the same post(s) as the warning or regulatory sign that it supplements.

03 Unless otherwise provided in this Manual for a particular plaque, supplemental warning plaques shall be mounted below the sign they supplement.

Figure 2C-12. Supplemental Warning Plaques  
(Delaware Revision)



Note: The background color (yellow or fluorescent yellow-green) shall match the color of the warning sign that it supplements.

- Shall not be used alone
- Installed below the sign they supplement

**Standard:**

- 02 **The lettering on Advance Street Name plaques shall be composed of a combination of lower-case letters with initial upper-case letters.**
- 03 **If two street names are used on the Advance Street Name plaque, a directional arrow pointing in the direction of the street shall be placed next to each street name. Arrows pointing to the left shall be placed to the left of the street name, and arrows pointing to the right shall be placed to the right of the street name.**

**Guidance:**

- 04 *If two street names are used on the Advance Street Name plaque, the street names and associated arrows should be displayed in the following order:*
- A. *For a single intersection, the name of the street to the left should be displayed above the name of the street to the right; or*
  - B. *For two sequential intersections, such as where the plaque is used with an Offset Side Roads (W2-7) or a Double Side Road (W2-8) symbol sign, the name of the first street encountered should be displayed above the name of the second street encountered, and the arrow associated with the second street encountered should be an advance arrow, such as the arrow shown on the W16-6P arrow plaque (see Figure 2C-12).*



W16-8P



W16-8aP

- **Upper-case and lower-case road names and sign border**
- *At single intersection, left above right*
- *At offset (sequential) intersections, first (upstream) above second (downstream)*

OLD



New requirements & guidelines:

- *Left road name above right road name*
- **Upper-case / lower-case legend**
- **Border**

NEW



### Option:

01 In situations where there is a need to warn drivers to watch for other slower forms of transportation traveling along the highway, such as bicycles, golf carts, horse-drawn vehicles, or farm machinery, a SHARE THE ROAD (W16-1P) plaque (see Figure 2C-12) may be used.

01A (DE Revision) In situations where there is a need to warn motorists to watch for bicyclists traveling along the highway, including junctions with designated bicycle routes, and on roadways with no shoulder or a shoulder with a width of less than 4 feet, a SHARE THE ROAD (W16-1P) plaque (see Figure 2C-12) may be used in conjunction with the Bicycle (W11-1) sign.

### Standard:

02 A W16-1P plaque shall not be used alone. If a W16-1P plaque is used, it shall be mounted below either a Vehicular Traffic Warning sign (see Section 2C.49) or a Non-Vehicular Warning sign (see Section 2C.50). The background color of the W16-1P plaque shall match the background color of the warning sign with which it is displayed.



- **Shall not be used alone and shall be mounted below Non-Vehicular Warning sign**
- DE Option: Used to supplement Bicycle warning sign where shoulder width < 4 ft

SHARE THE ROAD typically not used  
when shoulder width exceeds 4 ft;  
use standard **W11-1** with **W16-1P**



Salem Church Rd south of Chapman Rd

### Option:

01 A NEW (W16-15P) plaque (see Figure 2C-12) may be mounted above a regulatory sign when a new regulation takes effect in order to alert road users to the new traffic regulation. A NEW plaque may also be mounted above an advance warning sign (such as a Signal Ahead sign for a newly-installed traffic control signal) for a new traffic regulation.

### Standard:

02 The NEW plaque shall not be used alone.

03 The NEW plaque shall be removed no later than 6 months after the regulation has been in effect.



- Mounted above regulatory or warning sign for new traffic regulation
- **Shall be black-on-yellow**
- **Removed no later than 6 months after new regulation is implemented**

Church St at SR 1A



**Shall be black-on-yellow  
and mounted above W3-3**

## Guidance:

03A (DE Revision) *The NEW TRAFFIC PATTERN (W23-2P-DE) plaque (see Figure 2C-12) should be used along state-maintained roadways to provide advance warning of a change in a traffic pattern. If used, the NEW TRAFFIC PATTERN plaque should be mounted below a warning or regulatory sign and should be removed when the traffic pattern returns to normal, when the changed pattern is no longer considered to be new, or within six months.*



W23-2P-DE

- DE Guidance
  - Mounted below regulatory or warning sign for changed traffic pattern
  - Removed no later than 6 months after new traffic pattern is implemented
- DE Standard: **Now black-on-yellow**



**Standard:**

01 (DE Revision) A **STRICTLY ENFORCED (W21-12P-DE)** plaque (see Figure 2C-12) shall be installed below a Speed Limit (R2-1) sign where required by §701 of Title 21 of the Delaware Code.

**Option:**

02 (DE Revision) A **STRICTLY ENFORCED (W21-12P-DE)** plaque (see Figure 2C-12) may be used in combination with a Speed Limit (R2-1) sign or other regulatory sign where additional emphasis is needed.



W21-12P-DE

- DE Standard: **Installed where required by DE Code (36" x 24")**
- DE Option: Installed where additional emphasis is needed

(c) Any arrests for violations of § 4168 or § 4169 of this title or any local ordinance equivalent thereof by a municipal, town or city police department within its jurisdiction as defined by its charter on a state highway shall occur only if:

(3) A yellow "strictly enforced" sign is posted below the speed limit sign;

(d) "State highways," as used in subsection (c) of this section, include the following:

- (1) U.S. 13;
- (2) U.S. 113;
- (3) Delaware Route 1 (SR 1);
- (4) Interstate I-95;
- (5) Interstate I-495;
- (6) Delaware Route 141;
- (7) Delaware Route 2;
- (8) Delaware Route 896;
- (9) U.S. Route 40;
- (10) U.S. Route 301;
- (11) U.S. 202; and
- (12) Interstate I-295

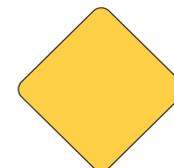
**US 13 southbound entering Smyrna**



- **Obstructions within the roadway require Type 1 or Type 3 object markers and corresponding pavement markings**
- Obstructions adjacent to the roadway may be delineated with Type 2 or Type 3 object markers
- The end of a roadway may be delineated with a Type 4 object marker

**Figure 2C-13. Object Markers  
(Delaware Revision)**

**Type 1 Object Markers  
(obstructions within the roadway)**



OM1-3

**Type 2 Object Markers  
(obstructions adjacent to the roadway)**



OM2-2V



OM2-2H

**Type 3 Object Markers  
(obstructions adjacent to or within the roadway)**



OM3-L

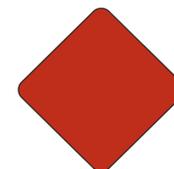


OM3-C



OM3-R

**Type 4 Object Markers  
(end of roadway)**



OM4-3

02 The lettering for names of places, streets, and highways on conventional road guide signs shall be a combination of lower-case letters with initial upper-case letters (see Section 2A.13). The nominal loop height of the lower-case letters shall be 3/4 the height of the initial upper-case letter. When a mixed-case legend letter height is specified referring only to the initial upper-case letter, the height of the lower-case letters that follow shall be determined by this proportion. When the height of a lower-case letter is referenced, the reference is made to the nominal loop height and the height of the initial upper-case letter shall also be determined by this proportion.

03 All other word legends on conventional road guide signs shall be in upper-case letters.

- **Destination legends shall be combination of upper-case and lower-case letters**
- **All other legends shall be upper-case**

03 The principal legend on guide signs shall be in letters and numerals at least 6 inches in height for all upper-case letters, or a combination of 6 inches in height for upper-case letters and 4.5 inches in height for lower-case letters. On low-volume roads (as defined in Section 5A.01) with speeds of 25 mph or less, and on urban streets with speeds of 25 mph or less, the principal legend shall be in letters at least 4 inches in height for all upper-case letters, or a combination of 4 inches in height for upper-case letters and 3 inches in height for lower-case letters.

- **6" upper or 6"/4.5" upper/lower (min.) on roads with posted speed > 25 MPH**
- **4" upper or 4"/3" upper/lower (min.) on roads with posted speed ≤ 25 MPH**



**Subdivision name shall be  
combination of upper-case  
and lower-case letters**



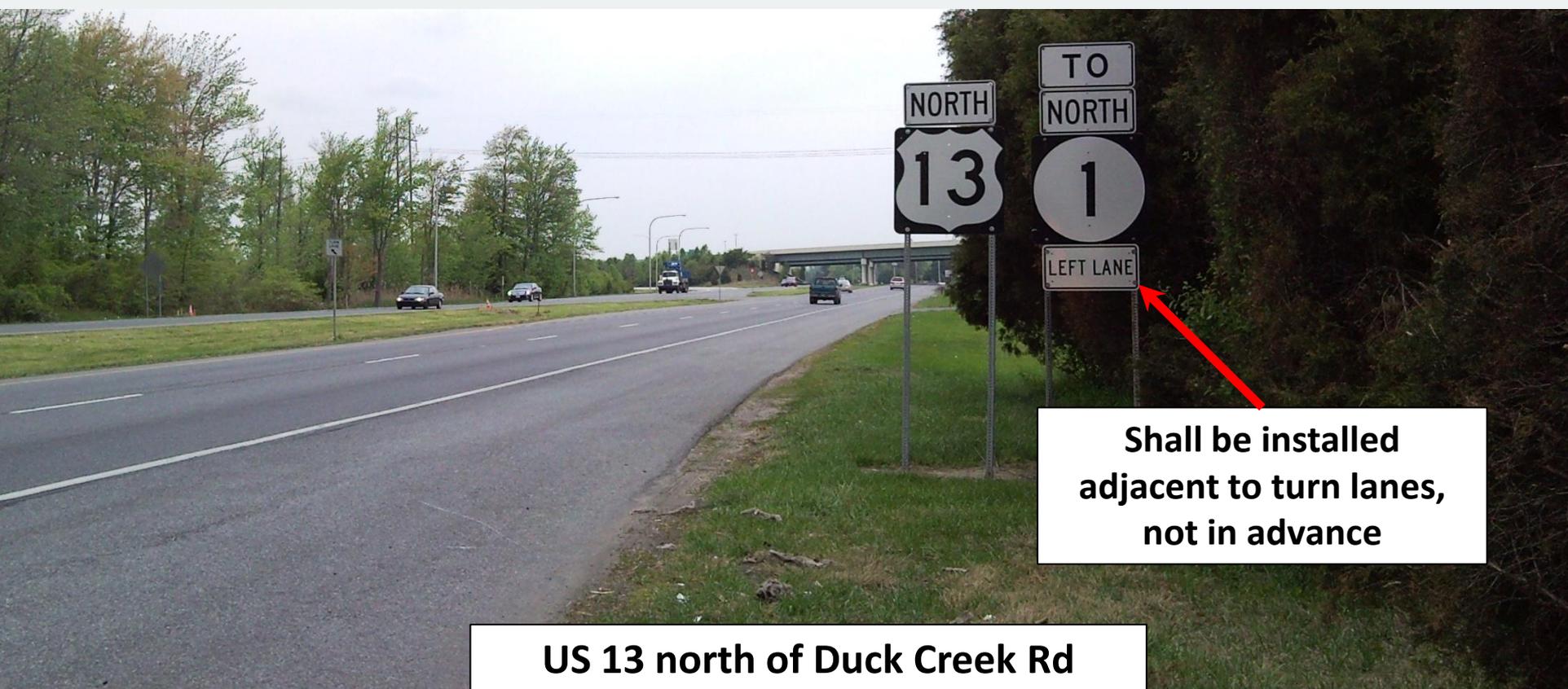
**Old Baltimore Pk at Salem Church Rd / Salem Woods Dr**

### Standard:

02 If used, the Lane Designation auxiliary signs shall be used only where the designated lane is a mandatory movement lane and shall be located adjacent to the full-width portion of the mandatory movement lane. The Lane Designation auxiliary signs shall not be installed adjacent to a through lane in advance of a lane that is being added or along the taper for a lane that is being added.



- **Installed adjacent to mandatory turn lanes only, not adjacent to through lanes in advance of turn lanes**



Shall be installed adjacent to turn lanes, not in advance

US 13 north of Duck Creek Rd

**Standard:**

02 **The Junction assembly shall be installed in advance of every intersection where a numbered route is intersected or joined by another numbered route.**

*Guidance:*

03 *In urban areas, the Junction assembly should be installed in the block preceding the intersection. In urban areas where speeds are low, the Junction assembly should not be installed more than 300 feet in advance of the intersection.*

04 *In rural areas, the Junction assembly should be installed at least 400 feet in advance of the intersection. In rural areas, the minimum distance between a Junction assembly and either a Destination sign or an Advance Route Turn assembly should be 200 feet.*

- **Installed in advance of every intersection of two numbered routes**
- *Urban areas – Installed along block preceding intersection; however, not more than 300 ft in advance of intersection*
- *Rural areas – Installed at least 400 ft in advance of intersection*



**Standard:**

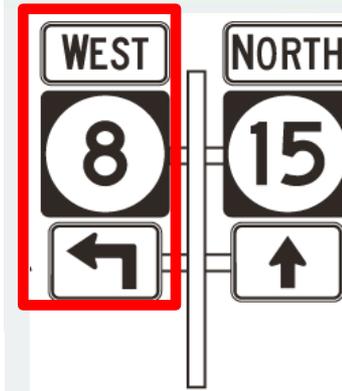
01 An Advance Route Turn assembly shall consist of a route sign, an Advance Turn Arrow or word message auxiliary sign, and a Cardinal Direction auxiliary sign, if needed. It shall be installed in advance of an intersection where a turn must be made to remain on the indicated route.

*Guidance:*

03 Where a multiple-lane highway approaches an interchange or intersection with a numbered route, the Advance Route Turn assembly should be used to pre-position turning vehicles in the correct lanes from which to make their turn.

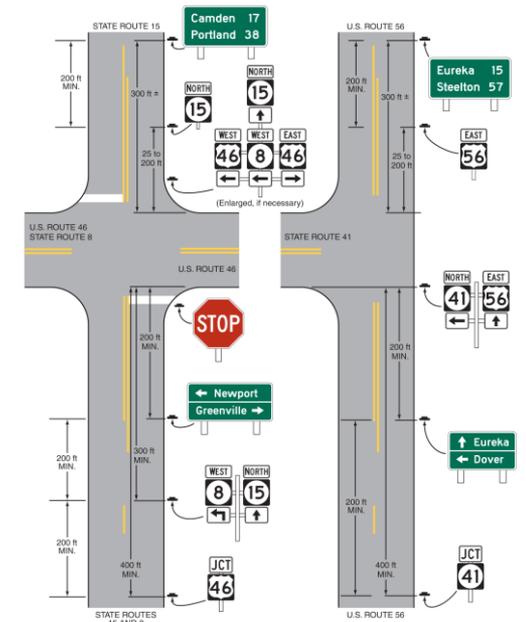
**Standard:**

06 An assembly that includes an Advance Turn Arrow auxiliary sign shall not be placed where there is an intersection between it and the designated turn.



- **Installed in advance of an intersection where a turn is required to remain on the numbered route**
- *Used along multi-lane roads to position motorists in advance of an interchange or intersection with a numbered route*
- *Typical placement depicted in Figure 2D-6*
- **Shall not be placed in advance of an intermediate intersection**

Figure 2D-6. Illustration of Directional Assemblies and Other Route Signs (for One Direction of Travel Only) (Sheet 2 of 4)



Note: The spacings shown on this figure are for rural intersections. See Sections 2D.29, 2D.30, 2D.32, 2D.34, 2D.40, and 2D.42 for low-speed and/or urban conditions.

**Advance Route Turn Assembly installed in advance of the intersection to indicate that a turn is required to remain on SR 36**



**Directional Assemblies at the intersection where a turn is required to remain on SR 36**



**SR 36 at SR 16 / St. Johnstown Rd**

- A. Turn movements (indicated in advance by an Advance Route Turn assembly) shall be marked by a Directional assembly with a route sign displaying the number of the turning route and a single-headed arrow pointing in the direction of the turn.
- B. The beginning of a route (indicated in advance by a Junction assembly) shall be marked by a Directional assembly with a route sign displaying the number of that route and a single-headed arrow pointing in the direction of the route.
- C. An intersected route (indicated in advance by a Junction assembly) on a crossroad where the route is designated on both legs shall be designated by:
  - 1. Two Directional assemblies, each with a route sign displaying the number of the intersected route, a Cardinal Direction auxiliary sign, and a single-headed arrow pointing in the direction of movement on that route; or
  - 2. A Directional assembly with a route sign displaying the number of the intersected route and a double-headed arrow, pointing at appropriate angles to the left, right, or ahead.
- D. An intersected route (indicated in advance by a Junction assembly) on a side road or on a crossroad where the route is designated only on one of the legs shall be designated by a Directional assembly with a route sign displaying the number of the intersected route, a Cardinal Direction auxiliary sign, and a single-headed arrow pointing in the direction of movement on that route.

- **Shall be installed for:**
  - Turn movements to remain on numbered route
  - Beginning of a numbered route
  - Intersection with a numbered route



SR 71 at SR 72

*Guidance:*

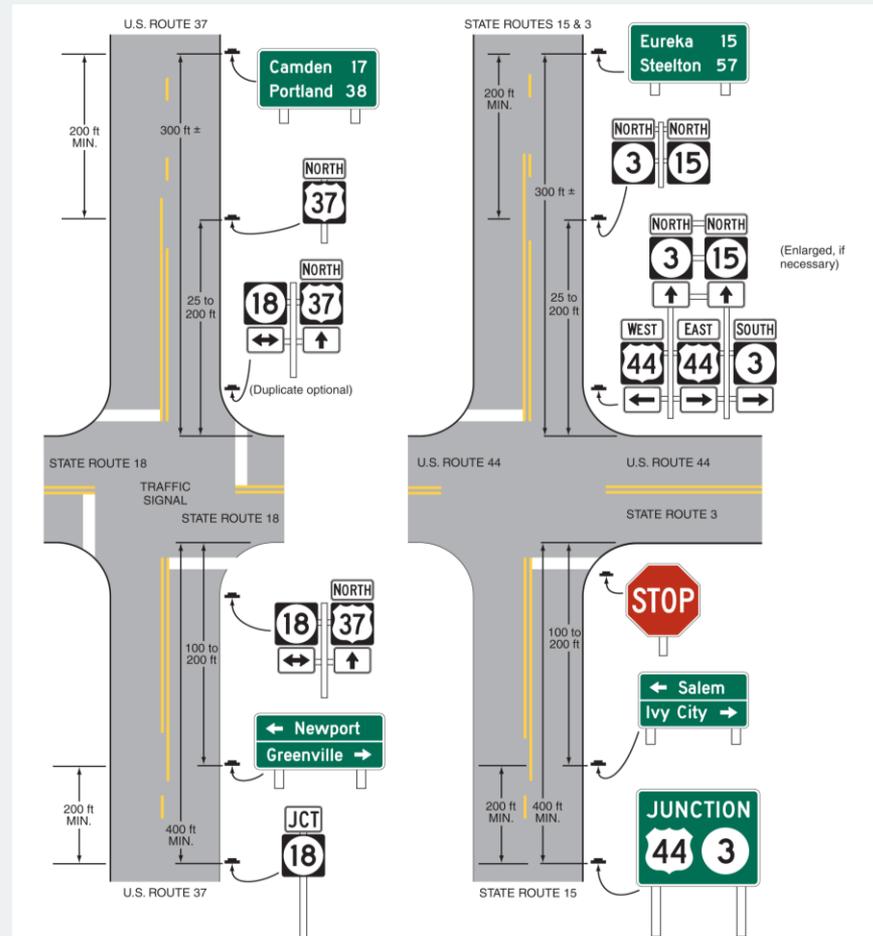
02 *Straight-through movements should be indicated by a Directional assembly with a route sign displaying the number of the continuing route and a vertical arrow. A Directional assembly should not be used for a straight-through movement in the absence of other assemblies indicating right or left turns, as the Confirming assembly sign beyond the intersection normally provides adequate guidance.*

- *Straight/through assemblies installed for the continuing route at locations with left or right-turn assemblies*



03 Directional assemblies should be located on the near right corner of the intersection. At major intersections and at Y or offset intersections, additional Directional assemblies should be installed on the far right or left corner to confirm the near-side assemblies. When the near-corner position is not practical for Directional assemblies, the far right corner should be the preferred alternative, with oversized signs, if necessary, for legibility. Where unusual conditions exist, the location of a Directional assembly should be determined by engineering judgment with the goal being to provide the best possible combination of view and safety.

- Installed on near right corner of intersection
- At major intersections, supplemental assembly installed on far side of intersection
- Typical placements depicted in Figure 2D-6



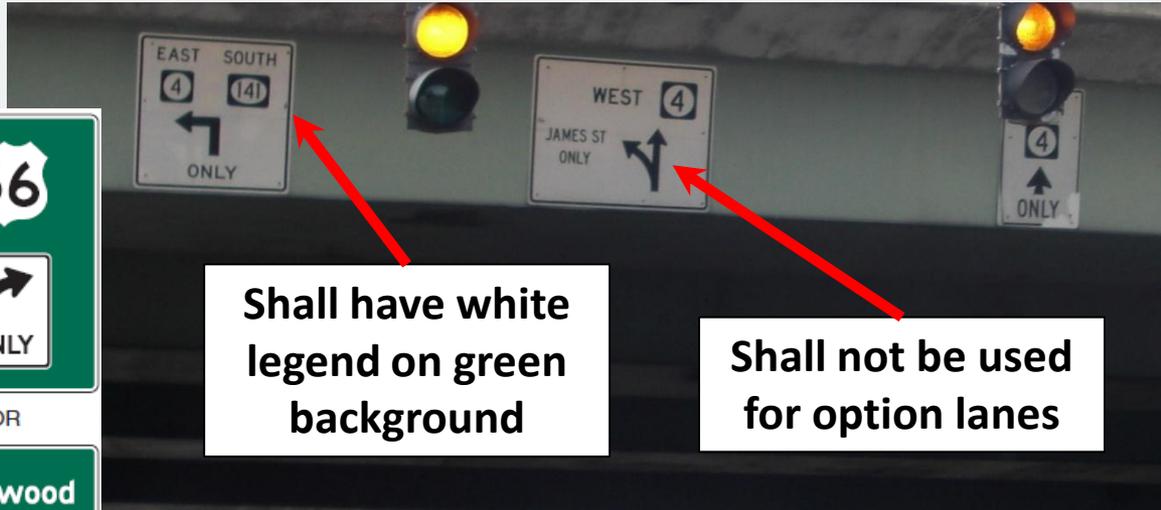
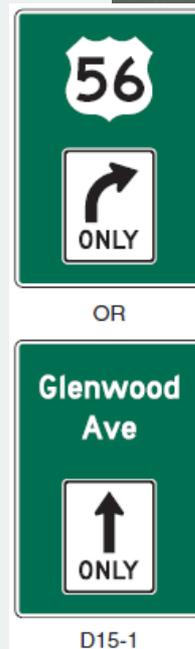
Note: The spacings shown on this figure are for rural intersections. See Sections 2D.29, 2D.30, 2D.32, 2D.34, 2D.40, and 2D.42 for low-speed and/or urban conditions.

**Standard:**

04 The Combination Lane-Use/Destination (D15-1) overhead guide sign shall be used only where the designated lane is a mandatory movement lane. The D15-1 sign shall not be used for lanes with optional movements.

05 The D15-1 sign shall have a green background with a white border. As shown in Figure 2D-7, the lane-use sign (see Chapter 2B) shall be placed near the bottom of the sign and the destination information shall be placed near the top of the sign. The D15-1 sign shall be located approximately over the center of the lane to which it applies.

- Shall be used with exclusive lanes only, not option lanes
- White-on-green with integrated regulatory sign
- Centered over the travel lane



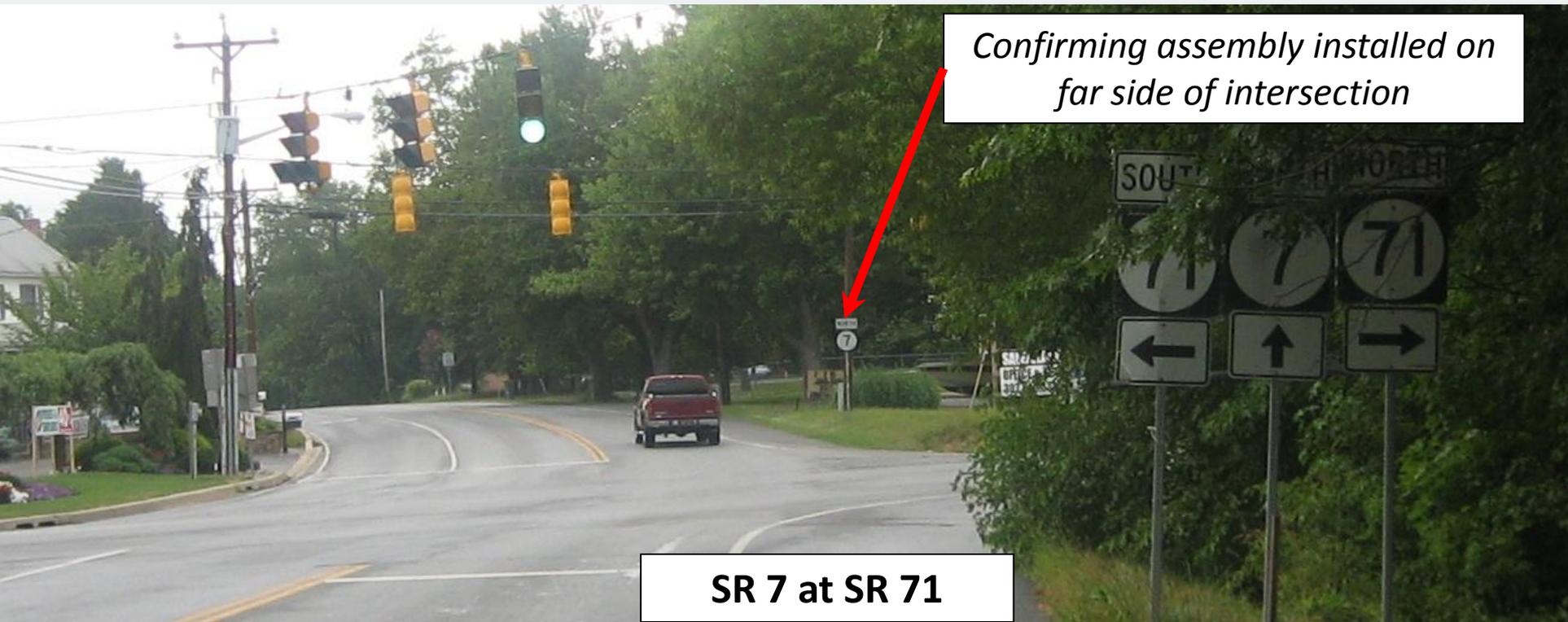
SR 4 westbound at Marshall St

*Guidance:*

- 02 *A Confirming assembly should be installed just beyond intersections of numbered routes. It should be placed 25 to 200 feet beyond the far shoulder or curb line of the intersected highway.*
- 03 *If used, Reassurance assemblies should be installed between intersections in urban areas as needed, and beyond the built-up area of any incorporated city or town.*
- 04 *Route signs for either confirming or reassurance purposes should be spaced at such intervals as necessary to keep road users informed of their routes.*



- *Confirming assembly installed 25 ft to 200 ft downstream of intersections with numbered routes*



*Confirming assembly installed on far side of intersection*

**SR 7 at SR 71**

## Support:

01 Trailblazer assemblies provide directional guidance to a particular road facility from other highways in the vicinity. This guidance is accomplished by installing Trailblazer assemblies at strategic locations to indicate the direction to the nearest or most convenient point of access. The use of the word TO indicates that the road or street where the sign is posted is not a part of the indicated route, and that a road user is merely being directed progressively to the route.

## Standard:

02 A Trailblazer assembly shall consist of a TO auxiliary sign, a route sign for a numbered or named highway (see Section 2D.53) or an Auto Tour Route sign (see Section 2H.07), and a single-headed Directional Arrow auxiliary sign pointing in the direction leading to the route. Where the Trailblazer assembly is for an alternative route, the appropriate auxiliary sign for an alternative route (see Section 2D.16) shall also be included in the assembly.



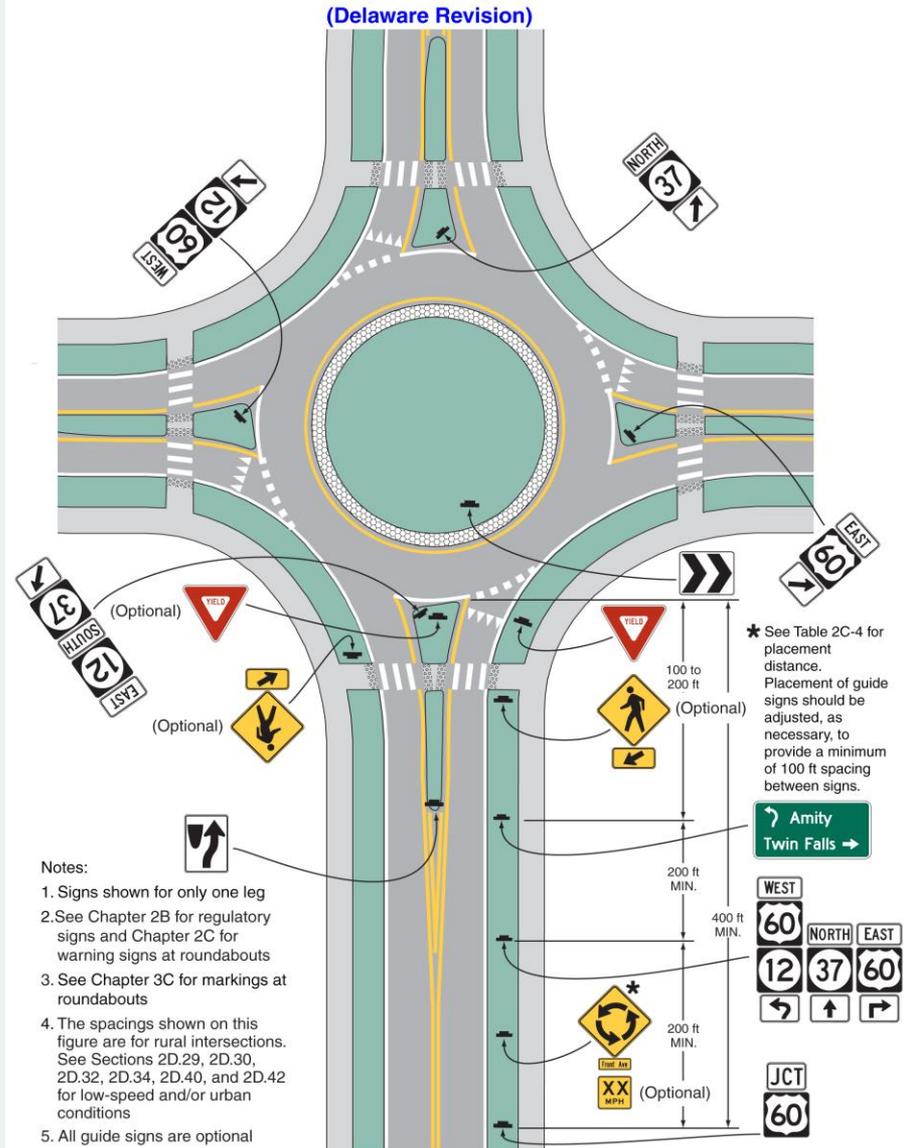
SR 9 at SR 141



DE Guidance omits optional "dot"

Choptank Rd roundabout

Figure 2D-9. Example of Regulatory, Warning, and Guide Signs for Roundabouts.  
(Sheet 1 of 2)



*Guidance:*

01 *Street Name (D3-1 and D3-1a) signs (see Figure 2D-10) should be installed in urban areas at all street intersections regardless of other route signs that might be present and should be installed in rural areas to identify important roads that are not otherwise signed.*

*Option:*

01A (DE Revision) Private Street Name (D3-1-DE1) signs (see Figure 2D-10) may be installed at the intersection of a state-maintained roadway with a private roadway or at the intersection of two private roadways.

**Standard:**

03 **The lettering for names of streets and highways on Street Name signs shall be composed of a combination of lower-case letters with initial upper-case letters (see Section 2A.13).**

*Option:*

15 The border may be omitted from a Street Name sign.

- *Installed at all intersections*
- **Upper-case/lower-case letters**
- Omit sign border (DE preference)
- DE Option: White background for private roads



**Guidance:**

04 (DE Revision) Except as provided in Paragraphs 5, 6, and 7 lettering on post-mounted Street Name signs should be composed of initial upper-case letters at least 6 inches in height and lower-case letters at least 4.5 inches in height.

05 On multi-lane streets with speed limits greater than 40 mph, the lettering on post-mounted Street Name signs should be composed of initial upper-case letters at least 8 inches in height and lower-case letters at least 6 inches in height.

**Option:**

06 (DE Revision) At the intersection of two subdivision streets, the lettering on post-mounted Street Name signs may be composed of initial upper-case letters at least 4 inches in height and lower-case letters at least 3 inches in height.

**Guidance:**

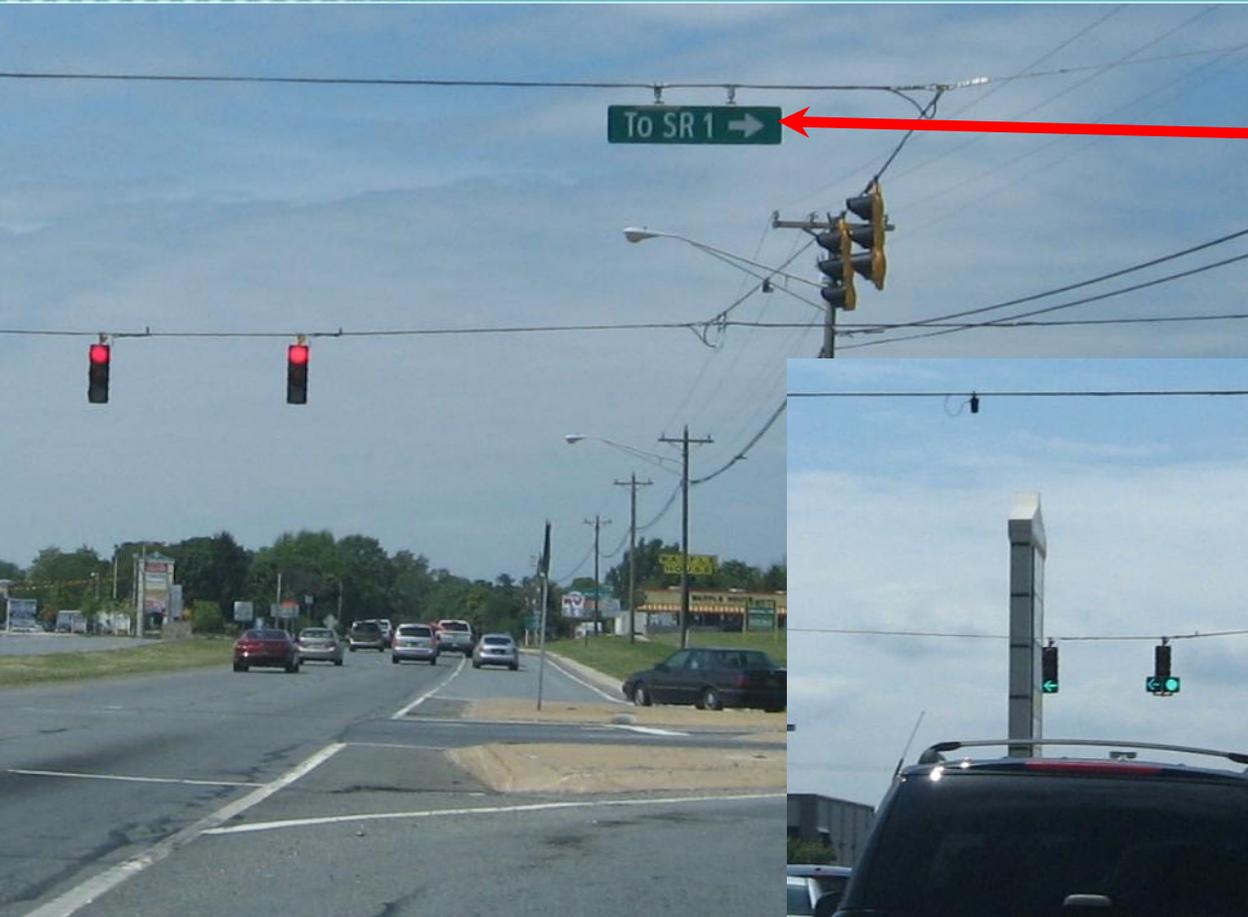
07 If overhead Street Name signs are used, the lettering should be composed of initial upper-case letters at least 12 inches in height and lower-case letters at least 9 inches in height.

- Minimum letter heights based on Table 2D-2
- DE Guidance: 4" letter heights for intersection of two subdivision streets

**Table 2D-2. Recommended Minimum Letter Heights on Street Name Signs (Delaware Revision)**

Type of Mounting	Type of Street or Highway	Speed Limit	Recommended Minimum Letter Height*	
			Initial Upper-Case	Lower-Case
Overhead	All types	All speed limits	12 inches	9 inches
Post-mounted	Multi-lane	More than 40 mph	8 inches	6 inches
Post-mounted	Multi-lane	40 mph or less	6 inches	4.5 inches
Post-mounted	2-lane	All speed limits	6 inches	4.5 inches
Post-mounted	Intersection of two subdivision streets	25 mph or less	4 inches	3 inches

\* Reduced letter height and reduced edge spacing may be used on Street Name signs if the sign size must be reduced due to factors including lane width or vertical or lateral clearance (see Paragraph 5 of Section 2D.04)



*Overhead street name signs with 12" and 9" upper/lower legend*



**US 13 at SR 1 S. Smyrna ramps / Simon's Corner**

*Guidance:*  
03 *The signing of conventional roads with one lane of traffic approaching an interchange should consist of a sequence containing the following signs (see Figure 2D-11):*

- A. *Junction Assembly*
- B. *Destination sign*
- C. *Directional Assembly or Entrance Direction sign for the first ramp*
- D. *Advance Route Turn Assembly or Advance Entrance Direction sign with an advance turn arrow*
- E. *Directional Assembly or Entrance Direction sign for the second ramp*

- *Signing along single-lane approaches to interchanges should follow Figure 2D-11*



## Standard:

02 **On multi-lane conventional roads approaching an interchange, guide signs shall be provided to identify which direction of turn is to be made and/or which specific lane to use for ramp access to each direction of the freeway or expressway.**

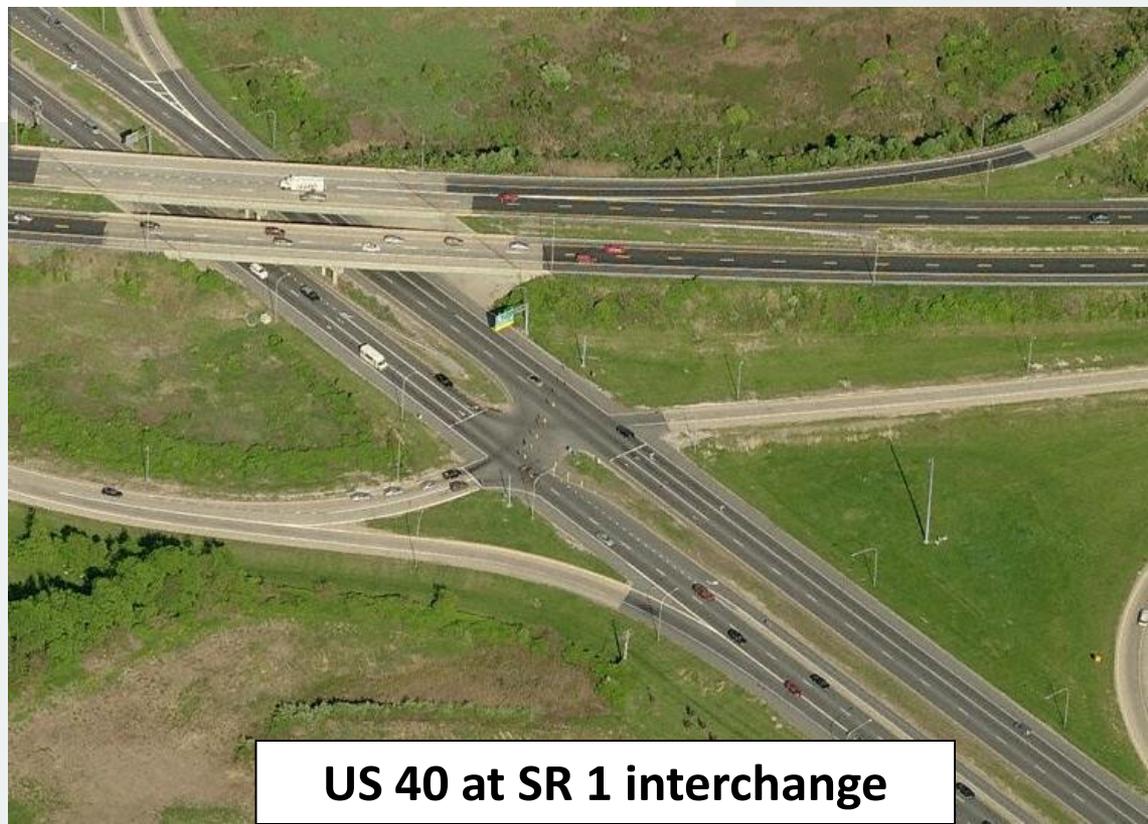
## Guidance:

07 *On multi-lane conventional roads approaching an interchange, the sign sequence should contain the following signs (see Figures 2D-13 through 2D-15):*

- A. *Junction Assembly*
- B. *Advance Entrance Direction sign(s) for both directions (if applicable) of travel on the freeway or expressway*
- C. *Entrance Direction sign for first ramp*
- D. *Advance Turn Assembly*
- E. *Entrance Direction sign for the second ramp*

- **Guide signs indicating directions of turns and/or lane use shall be installed along multi-lane roads approaching interchanges**

- *Signing should follow Figures 2D-13 through 2D-15*



**US 40 at SR 1 interchange**



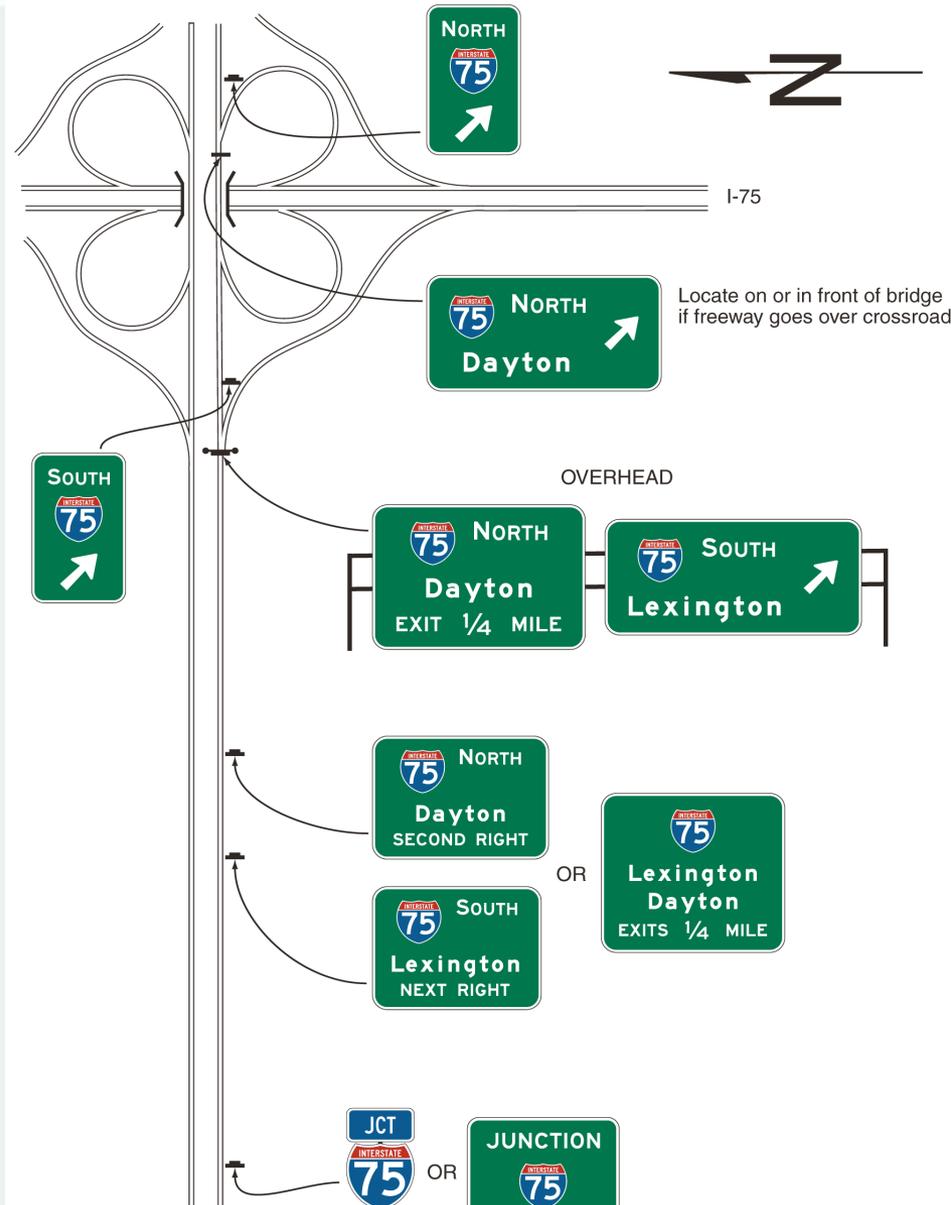
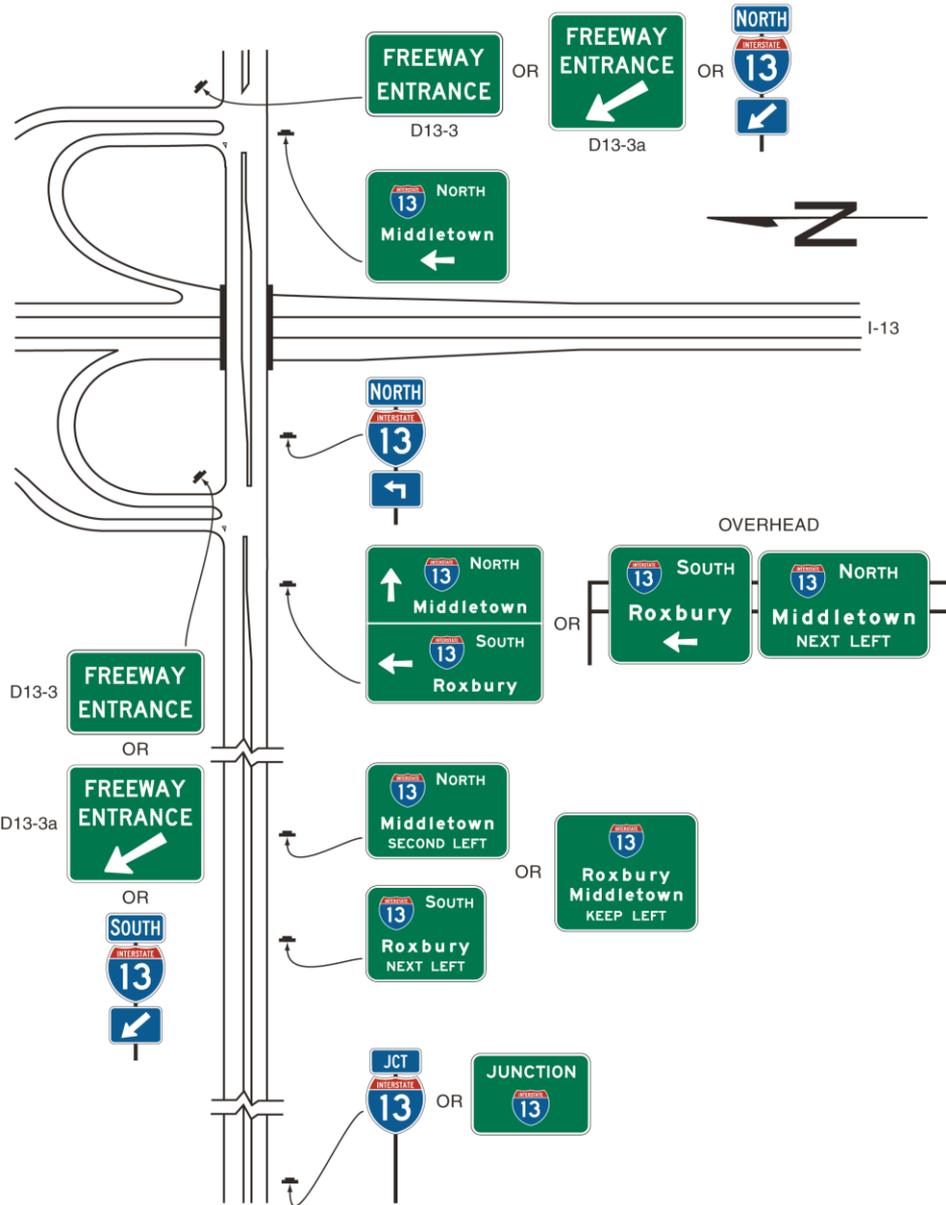
**SR 273 at SR 1 interchange**

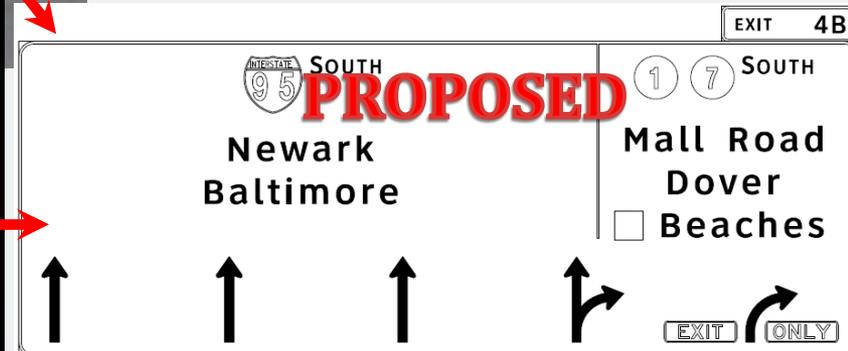


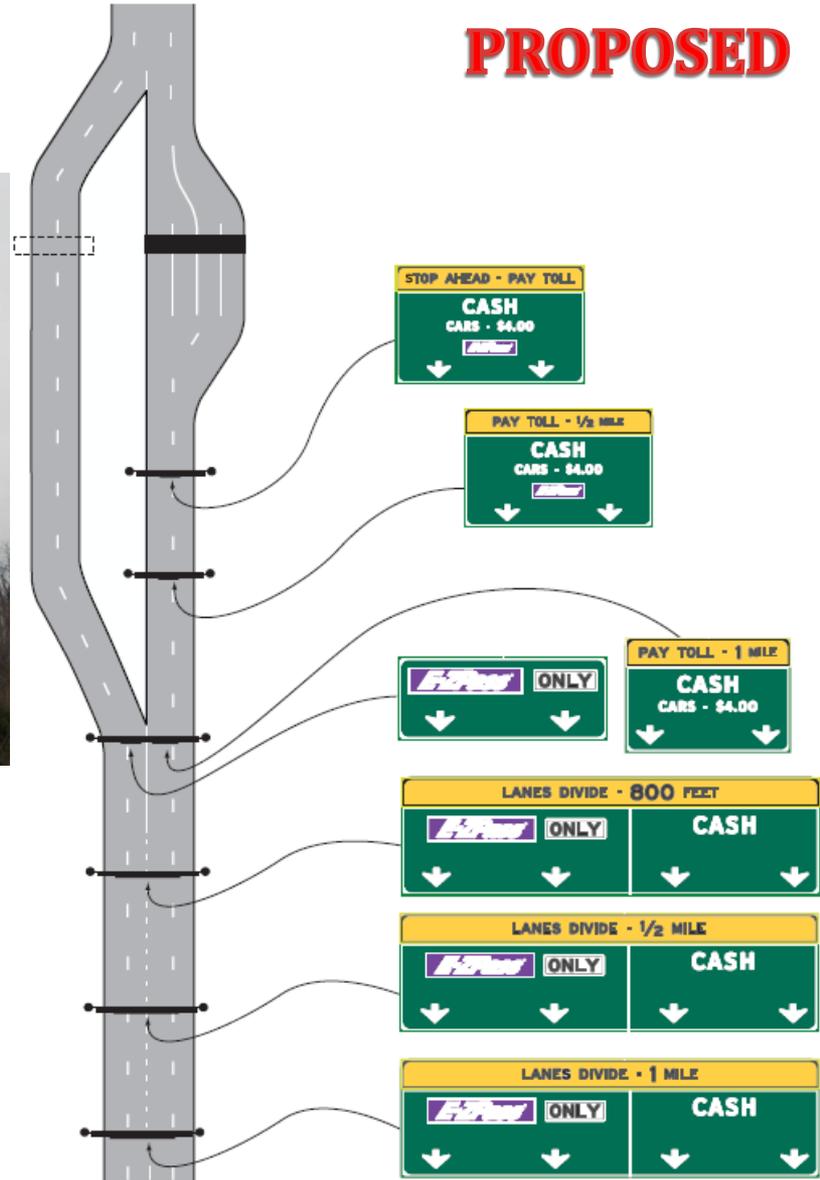


**SR 273 at SR 1 interchange**

# Section 2D.45 Signing on Conventional Roads on Approaches to Interchanges











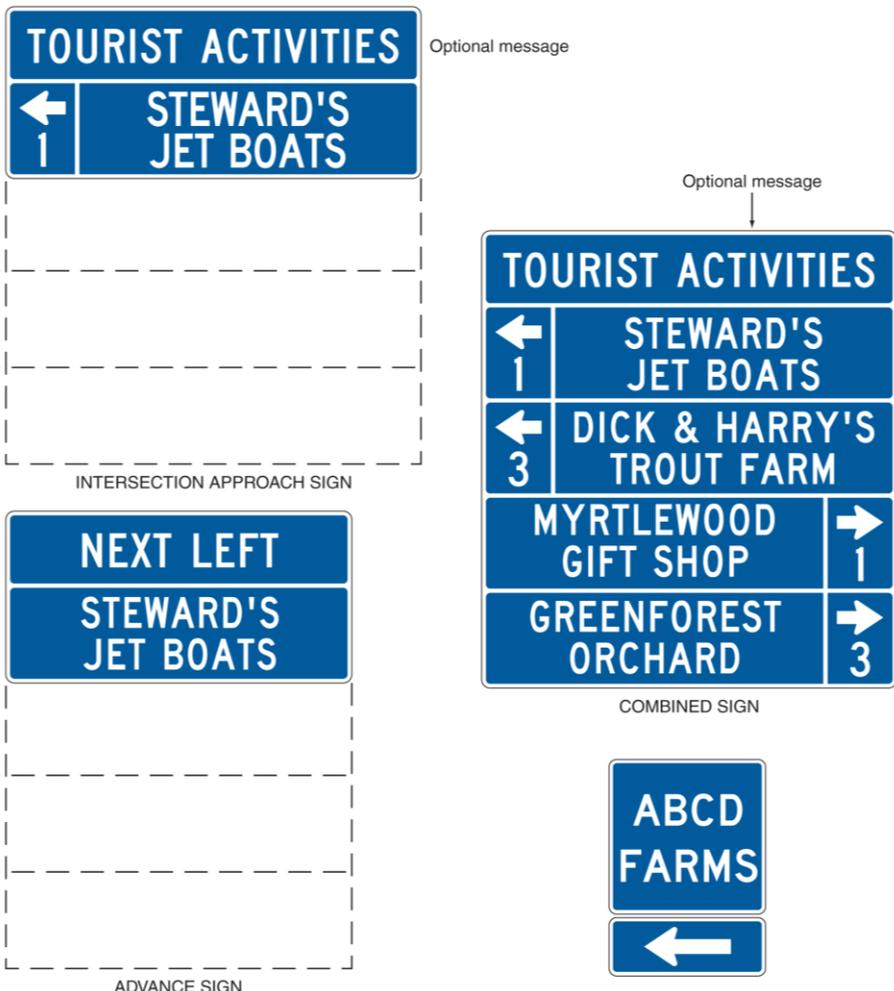
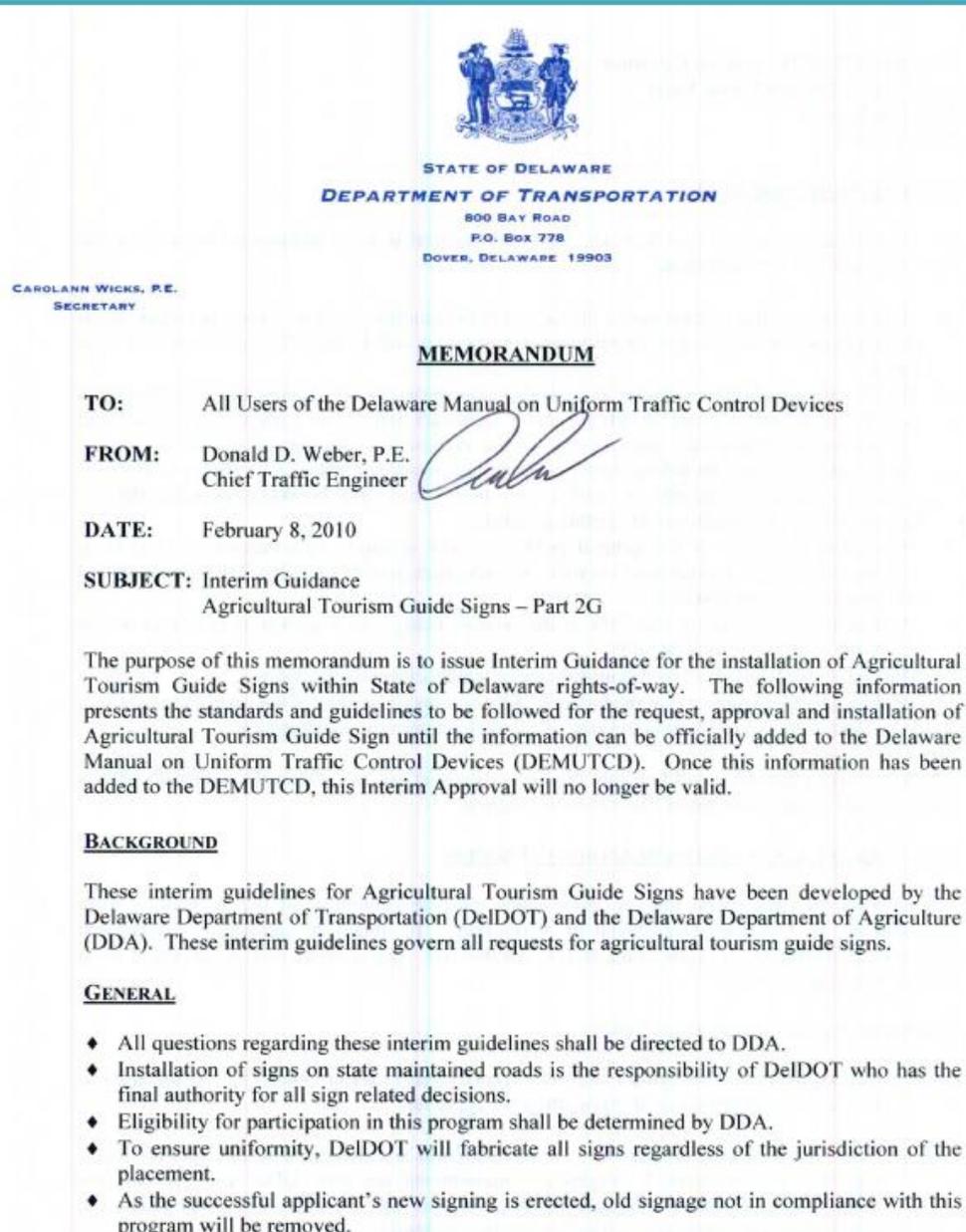
I-1	I-2	I-2-DE1	I-2-DE2	I-3	I-5	I-6
I-7	I-8	I-9	I-11	I-12	SI-2-DE	
Train Station	Library	Vehicle Ferry Terminal	Recycling	Light Rail Transit Station		
Advance Turn and Directional Arrow Auxiliary Signs for use with General Information Signs						
					Example of directional assembly	
M5-1	M5-2	M6-1	M6-2	M6-3		







Figure 2K-1. Examples of Tourist-Oriented Directional Signs  
(Delaware Revision)

**STATE OF DELAWARE**  
**DEPARTMENT OF TRANSPORTATION**  
800 BAY ROAD  
P.O. BOX 778  
DOVER, DELAWARE 19903

CAROLANN WICKS, P.E.  
SECRETARY

**MEMORANDUM**

**TO:** All Users of the Delaware Manual on Uniform Traffic Control Devices

**FROM:** Donald D. Weber, P.E.  
Chief Traffic Engineer *[Signature]*

**DATE:** February 8, 2010

**SUBJECT:** Interim Guidance  
Agricultural Tourism Guide Signs – Part 2G

The purpose of this memorandum is to issue Interim Guidance for the installation of Agricultural Tourism Guide Signs within State of Delaware rights-of-way. The following information presents the standards and guidelines to be followed for the request, approval and installation of Agricultural Tourism Guide Sign until the information can be officially added to the Delaware Manual on Uniform Traffic Control Devices (DEMUTCD). Once this information has been added to the DEMUTCD, this Interim Approval will no longer be valid.

**BACKGROUND**

These interim guidelines for Agricultural Tourism Guide Signs have been developed by the Delaware Department of Transportation (DelDOT) and the Delaware Department of Agriculture (DDA). These interim guidelines govern all requests for agricultural tourism guide signs.

**GENERAL**

- ◆ All questions regarding these interim guidelines shall be directed to DDA.
- ◆ Installation of signs on state maintained roads is the responsibility of DelDOT who has the final authority for all sign related decisions.
- ◆ Eligibility for participation in this program shall be determined by DDA.
- ◆ To ensure uniformity, DelDOT will fabricate all signs regardless of the jurisdiction of the placement.
- ◆ As the successful applicant's new signing is erected, old signage not in compliance with this program will be removed.







						R1-1				
EM-1	EM-1-DE	EM-1a	EM-2	EM-3	EM-4					
EM-5	EM-6a	EM-6b	EM-6c	EM-6d						
EM-7a	EM-7b	EM-7c	EM-7d	EM-7-DE						

## Today's presentation will be posted on DeIDOT's DE MUTCD website

[http://www.deldot.gov/information/pubs\\_forms/manuals/de\\_mutcd/index.shtml](http://www.deldot.gov/information/pubs_forms/manuals/de_mutcd/index.shtml)

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## Publications And Forms Delaware MUTCD

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### Delaware Manual on Uniform Traffic Control Devices (MUTCD)

- The Delaware Register of Regulations Finding of Fact (August 1, 2007) [Part 2,3,4,5,10]
- The Delaware Register of Regulations Finding of Fact (November 20, 2007) [Part 6]
- The Delaware Register of Regulations Finding of Fact (July 1, 2008) [Part 1, 7, 8, 9]
- The Delaware Register of Regulations Finding of Fact (May 1, 2010) [Part 2, 3, 6]
- The Delaware Register of Regulations Finding of Fact (September 1, 2009) [Part 2, 6, 9]
- Delaware MUTCD Revisions

### INFORMATION

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Mark Luszcz, P.E., PTOE  
*Assistant Chief Traffic Engineer*  
Ph: (302) 659-4091  
[mark.luszcz@state.de.us](mailto:mark.luszcz@state.de.us)

Adam Weiser, P.E., PTOE  
*Safety Programs Manager*  
Ph: (302) 659-4073  
[adam.weiser@state.de.us](mailto:adam.weiser@state.de.us)

Matt Buckley, P.E., PTOE  
*Whitman, Requardt & Assoc., LLP*  
Ph: (800) 787-7100  
[mbuckley@wrallp.com](mailto:mbuckley@wrallp.com)

- March 16<sup>th</sup> – Part 6 (Temporary Traffic Control)
- April 12<sup>th</sup> – Part 3 (Markings)
- May 16<sup>th</sup> – Parts 4 & 7 (Traffic Signals & School Areas)
- June 15<sup>th</sup> – Parts 8 & 9 (Railroads & Bicycle Facilities)
- T<sup>2</sup> course registration

<http://www.ce.udel.edu/dct/T2Courses.html>